MP6000
INTEGRATOR GUIDE

MP6000

INTEGRATOR GUIDE

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Revision A

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Warranty

Subject to the terms of Zebra’s hardware warranty statement, the MP6000 is warranted against defects in workmanship and materials for a period of 1 (one) year from the date of shipment.

For the complete Zebra hardware product warranty statement, go to:
http://www.motorolasolutions.com/warranty

Revision History

Table A includes revisions to the guide.

Table A *Revisions*

Change	Date	Description
-01 Rev A	6/2013	Initial Release.
-02 Rev A	6/2013	**Added:** - Figure 3-43, Sensormatic Coil Routing **Updated:** - Figure 1-2, Left Side View - Figure 3-44, Checkpoint Antenna Installation - Figure A-2 callouts - Checkpoint antenna routing color
-03 Rev A	12/2014	**Added:** - NCR single cable scanner/scale, NCR scanner, Datalogic scanner only, and new RS-232 bar codes. - Support for third party hand-held scanners using USB auxiliary ports. - RS-232 host connection to AUX 2 port (leaves USB host port available for future use). - Programmable scale initial zero setting range. - IBM scale 3-byte status support. - Volume button disable feature. - Dual cable scale (SASI only). - Wincor A/B, and RS-232 host interfaces (see *Table 2-4 on page 2-15*). - USB HID keyboard interface. - Drivers License Parsing (some models). **Updated:** - Host interface ports, and cables.
-04 Rev A	5/2014	**Added:** - Third Party Scale bar codes. - Price Computational Scale Interface circuit drawing. - Mounting frame. **Updated:** - Added information to step 2 on page 4-7.
-05 Rev A	7/2014	**Updated:** - Table A-1; E18, E25, E27 and E30 errors changed to warnings. - From *Active Mode **5.0** average, <12W peak* to *Active Mode **4.65** average, <12W peak*.

Table A *Revisions (Continued)*

Change	Date	Description
-06 Rev A	11/2014	**Updated:** - Price Computational Scale Interface. - Connecting the USB Cable. - Checkpoint Antenna Installation. - Page 1-3, Table 1-1: added Bahamas and Ecuador to OIML group. - Figure 3-41; Adjusting Leveling Screws. - Figure 3-46; Checkpoint Antenna Installation. - Page 4-3: Updated Step 1 - Electronic Entry into Calibration Mode to include new firmware version calibration. - Page 5-6: Customer Side Scanner (CSS) - Optional section; second paragraph rephrased. **Added:** - Page 1-3: Leek platter diagram, and description. - Page 2-20: NCR Variant (both scanner only and scanner/scale versions). - Page 3-18: Speaker Wire Ferrite Placement (step and figure). - Figures 3-43 and 3-44; installing Sensormatic coils. - Replace drawing with Figure 3-40; Lowering the Short, Medium, Long MP6000 into the Counter. - Diagrams for installing Sensormatic Coils. - Page 4-8: Added the "Important" note regarding newer firmware in the section *Calibration Mode Exit Conditions*. - Page 4-11: "Important" note about audit tallies. - Page 5-27, Table 5-1: Added a new row for "Press and hold Scale Zero and Volume/Tone buttons" with two notes. - Page A-2: Under section "LED Display Notes" added "For scale firmware version # 1.04F (for applicable countries)" information. - Appendix E, Com Protocols. - Zebra Branding. - Added *Identifying Firmware Version* section, and various notes about new firmware times.

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ABOUT THIS GUIDE

Introduction

The *MP6000 Integrator Guide* provides information on installing, operating, and programming the MP6000.

Chapter Descriptions

Following are brief descriptions of each chapter in this guide.

- *Chapter 1, PRODUCT OVERVIEW AND FEATURES* provides an overview of the MP6000 including configurations, peripherals, and features.
- *Chapter 2, HOST INTERFACES AND CABLE PINOUTS* describes the host interfaces supported by the MP6000, how to connect the MP6000 to a host, setup, and cable pin-outs. It also includes host interface bar codes.
- *Chapter 3, SITE PREPARATION AND INSTALLATION* describes how to install the MP6000 into a counter top.
- *Chapter 4, SCALE CALIBRATION (MODELS WITH A SCALE ONLY)* describes how to change weight measurement, calibrate the scale, verify calibration, and recognize errors.
- *Chapter 5, OPERATING THE SCANNER* describes how to operate the MP6000 including buttons, switches, LED indicators, and scanning.
- *Chapter 6, 123SCAN2* provides information about configuring the MP6000 using the 123Scan^2 utility.
- *Appendix A, MAINTENANCE, TROUBLESHOOTING, AND ERROR CODES* provides error/warning codes, troubleshooting, and maintenance information.
- *Appendix B, TECHNICAL SPECIFICATIONS* provides technical information about the MP6000.
- *Appendix C, HOST INTERFACE CHARACTER SETS* provides ASCII character sets for some host interfaces.
- *Appendix D, PARAMETER DEFAULT TABLE* provides a list of defaults for the parameters in this guide. For all MP6000 programming bar codes, refer to the MP6000 Bar Code Programming Guide (p/n 72E-172633-xx).
- *Appendix E, COMMUNICATION PROTOCOLS* provides a table of MP6000 communication interfaces.

Notational Conventions

This document uses these conventions:

- “User” refers to anyone operating the device.
- “Device” refers to the MP6000.
- *Italics* are used to highlight specific items in the general text, and to identify chapters and sections in this and related documents. It also identifies names of windows, menus, menu items, and fields within windows.
- **Bold** identifies buttons, and switches to be tapped or clicked, and bar code names.
- Bullets (•) indicate:
  - lists of alternatives or action items.
  - lists of required steps that are not necessarily sequential.
- Numbered lists indicate a set of sequential steps, i.e., those that describe step-by-step procedures.

NOTE This symbol indicates something of special interest to the reader. Failure to read the note will not result in physical harm to the bar code reader, equipment or data.

IMPORTANT This symbol indicates something of importance to the reader. Failure to read the note may impair the equipment or data.

CAUTION This symbol indicates that if this information is ignored, the possibility of data or material damage may occur.

WARNING! **This symbol indicates that if this information is ignored the possibility that serious personal injury may occur.**

Related Publications

Following is a list of documents that provide additional information about configuring the MP6000:

- *MP6000 BAR CODE PROGRAMMING GUIDE*, p/n 72E-172633-xx, provides bar codes for MP6000 configuration.
- *MX101 PRODUCT REFERENCE GUIDE*, p/n 72E-171320-xx, provides general instructions for setting up, operating, maintaining, and troubleshooting the MX101 digital scanner.
- *MP6000 MULTI-PLANE IMAGING SCANNER REGULATORY GUIDE*, p/n 72-171321-xx, provides domestic and international regulatory information.
- *Advanced Data Formatting Programmer Guide*, p/n 72E-69680-xx, provides information on ADF, a means of customizing data before transmission to a host.

For the latest version of this guide and all guides, go to: http://www.motorolasolutions.com/support

Recommended Services Information

If you have a problem using the equipment, contact your facility's technical or systems support. If there is a problem with the equipment, they will contact the Zebra Customer Support Center at: http://www.motorolasolutions.com/support

When contacting Zebra support, please have the following information available:

- Serial number of the unit
- Model number or product name
- Software type and version number (if available).

Zebra responds to calls by e-mail, telephone or fax within the time limits set forth in service agreements.

If your problem cannot be solved by the Zebra Customer Support Center, you may need to return your equipment for servicing and will be given specific directions, a Field Service Technician from Zebra, or your authorized service provider may be sent to your location to perform the repair, depending on your level of entitlement set forth in the service agreement. Zebra is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty.

If you purchased your business product from a Zebra business partner, please contact that business partner for support.

Zebra recommends the following Service options to keep the MP6000 operating at peak performance throughout its lifecycle:

- Service from the Start with Advance Exchange Support (available for scanner-only configurations).
- Service from the Start with On Site System Support (available for scanner-only and scanner/scale configurations).
- Zebra also offers service support through authorized resellers who qualify as authorized service partners.

CHAPTER 1 PRODUCT OVERVIEW AND FEATURES

Introduction

This chapter includes the following topics:

- *Product Overview on page 1-2*
- *Configurations on page 1-3*
- *Peripherals on page 1-8*
- *Features of the MP6000 on page 1-9*.

Product Overview

The MP6000 is a data capture solution that uses a sophisticated optical arrangement to view six sides of an object as it passes through the scanning area. Bar code data is transmitted to a Point-Of-Sale (POS) host via USB, RS-232, or RS-485. Auxiliary device support includes USB and RS-232 hand-held scanners, Checkpoint and Sensormatic Electronic Article Surveillance (EAS), scale and optional Scale Display (varies with the model), USB staging flash drive (memory stick), as well as an optional Customer Side Scanner (2D imager) that may be mounted into the tower.

The MP6000 is designed to be embedded in a cutout in the retail checkstand.

Features include:

- Six sided scanning
  - Reads top-bottom, left-right, and cashier-customer side bar codes
  - Omni-directional symbol orientation.
- Optional integrated scale (single/dual interval).
- Optional Checkpoint EAS antenna.
- Optional integrated Sensormatic EAS coil antennas.
- Optional Scale Display (single/dual head) for scale installations.
- Auxiliary scanner support (USB and RS-232).
- High swipe speed for increased throughput.
- User interface (LED indicators, touch controls, audio).
- Aggressive scanning performance on high density, truncated, and poorly printed bar codes.
- 2D scanning (PDF, Aztec etc.) in both vertical and horizontal windows, or all six-sided orientations.
- Mobile bar code scanning (cell phone) in both vertical and horizontal windows, or all six-sided orientations.
- Optional integrated Customer Side Scanner (CSS) [1D/2D support].
- Scanner Management Service (SMS), and 123Scan² support enables remote configuration and monitoring attached peripherals.

Configurations

The MP6000 captures printed or mobile 1D or 2D bar codes. An optional customer-side scanner (CSS) can be added for bar codes displayed on mobile phones, traditional loyalty cards, or item bar codes. Hand-held scanner, integrated EAS, and scale support is also available.

This guide covers the configurations listed in *Table 1-1*.

NOTE 1. All configurations of the MP6000 include a sapphire glass horizontal platter. An optional sapphire glass horizontal leak platter is also available for EU configurations.

2. New scale configurations are added continually. If you don't see your country listed, call your Zebra office.

Table 1-1 *MP6000 Configurations*

Configuration	Description
MP6000-LN000M010US	Multi-plane scanner, long, with Checkpoint, worldwide.
MP6000-LP000M010US	Multi-plane scanner, long, with Checkpoint, with DL Parsing, US/CA.
MP6000-MN000M010US	Multi-plane scanner, medium, with Checkpoint, worldwide.
MP6000-MP000M010US	Multi-plane scanner, medium, with Checkpoint, with DL Parsing, US/CA.
MP6000-SN000M010US	Multi-plane scanner, short, with Checkpoint, worldwide.
MP6000-SP000M010US	Multi-plane scanner, short, with Checkpoint, with DL Parsing, US/CA.
MP6010-LN000M010US	Multi-plane scanner, long, with Checkpoint, with CSS, worldwide.
MP6010-LP000M010US	Multi-plane scanner, long, with Checkpoint, with DL Parsing, US/CA.
MP6010-MN000M010US	Multi-plane scanner, medium, with Checkpoint, with CSS, worldwide.
MP6010-MP000M010US	Multi-plane scanner, medium, with Checkpoint, with DL Parsing, US/CA.
MP6010-SN000M010US	Multi-plane scanner, short, with Checkpoint, with CSS, worldwide.
MP6010-SP000M010US	Multi-plane scanner, short, with Checkpoint, with DL Parsing, US/CA.
MP6200-LN000M010AU	Multi-plane scanner, long, with single interval scale, with Checkpoint, scale for Australia/NZ/SA.
MP6200-LN000M010CM	Multi-plane scanner, long, single interval kg scale, no CSS, Checkpoint, Canada-Mexico scale label.
MP6200-LN000M010EU	Multi-plane scanner, long, with single interval scale, with Checkpoint, scale for EU countries.

Notes:
1. **EU scales are legally accepted in the following countries: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Iceland, Italy, Liechtenstein, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, United Kingdom**
2. **OIML scales are legally accepted in the following countries: Bahamas, Barbados, Belize, Bermuda, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Hong Kong, Jamaica, Saint Lucia, Philippines, Thailand, Trinidad and Tobago, Vietnam**

Table 1-1 *MP6000 Configurations (Continued)*

Configuration	Description
MP6200-LN000M010NN	Multi-plane scanner, long, with single interval scale, with Checkpoint, scale for OIML countries.
MP6200-LN000M010US	Multi-plane scanner, long, with single interval scale, with Checkpoint, scale for US/Puerto Rico/Guam/USVI/British VI.
MP6200-LN000M01ABE	Multi-plane scanner, Long with single interval kg scale, with Checkpoint, scale Gravity Zone A for Belgium.
MP6200-LN000M01BBE	Multi-plane scanner, Long with single interval kg scale, with Checkpoint, scale Gravity Zone B for Belgium.
MP6200-LN000M01CBE	Multi-plane scanner, Long with single interval kg scale, with Checkpoint, scale Gravity Zone C for Belgium.
MP6200-LP000M010US	Multi-plane scanner, long, with single interval scale, with Checkpoint, with DL parsing, scale for US.
MP6200-MN000M010AU	Multi-plane scanner, medium, with single interval scale, with Checkpoint, scale for Australia/NZ/SA.
MP6200-MN000M010CM	Multi-plane scanner, medium, single interval kg scale, no CSS, Checkpoint, Canada-Mexico scale label.
MP6200-MN000M010EU	Multi-plane scanner, medium, with single interval scale, with Checkpoint, scale for EU countries.
MP6200-MN000M010NN	Multi-plane scanner, medium, with single interval scale, with Checkpoint, scale for OIML countries.
MP6200-MN000M010US	Multi-plane scanner, medium, with single interval scale, with Checkpoint, scale for US/Puerto Rico/Guam/USVI/British VI.
MP6200-MN000M01ABE	Multi-plane scanner, Medium with single interval kg scale, with Checkpoint, scale Gravity Zone A for Belgium.
MP6200-MN000M01BBE	Multi-plane scanner, Medium with single interval kg scale, with Checkpoint, scale Gravity Zone B for Belgium.
MP6200-MN000M01CBE	Multi-plane scanner, Medium with single interval kg scale, with Checkpoint, scale Gravity Zone C for Belgium.
MP6200-MP000M010US	Multi-plane scanner, medium, with single interval scale, with Checkpoint, with DL parsing, scale for US.
MP6210-LN000M010AU	Multi-plane scanner, long, with single interval scale, with Checkpoint, with CSS, scale for Australia/NZ/SA.

Notes:

1. **EU scales are legally accepted in the following countries: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Iceland, Italy, Liechtenstein, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, United Kingdom**

2. **OIML scales are legally accepted in the following countries: Bahamas, Barbados, Belize, Bermuda, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Hong Kong, Jamaica, Saint Lucia, Philippines, Thailand, Trinidad and Tobago, Vietnam**

Table 1-1 *MP6000 Configurations (Continued)*

Configuration	Description
MP6210-LN000M010CM	Multi-plane scanner, long, single interval kg scale, with CSS, Checkpoint, Canada-Mexico scale label.
MP6210-LN000M010EU	Multi-plane scanner, long, with single interval scale, with Checkpoint, with CSS, scale for EU countries.
MP6210-LN000M010NN	Multi-plane scanner, long, with single interval scale, with Checkpoint, with CSS, scale for OIML countries.
MP6210-LN000M010US	Multi-plane scanner, long, with single interval scale, with Checkpoint, with CSS, scale for US/Puerto Rico/Guam/USVI/British VI.
MP6210-LN000M01ABE	Multi-plane scanner, Long with single interval kg scale, with CSS, with Checkpoint, scale Gravity Zone A for Belgium.
MP6210-LN000M01BBE	Multi-plane scanner, Long with single interval kg scale, with CSS, with Checkpoint, scale Gravity B for Belgium.
MP6210-LN000M01CBE	Multi-plane scanner, Long with single interval kg scale, with CSS, with Checkpoint, scale Gravity Central C for Belgium.
MP6210-LP000M010US	Multi-plane scanner, long, with single interval scale, with Checkpoint, with CSS, with DL parsing, scale for US.
MP6210-MN000M010AU	Multi-plane scanner, medium, with single interval scale, with Checkpoint, with CSS, scale for Australia/NZ/SA.
MP6210-MN000M010CM	Multi-plane scanner, medium, single interval kg scale, with CSS, Checkpoint, Canada-Mexico scale label.
MP6210-MN000M010EU	Multi-plane scanner, medium, with single interval scale, with Checkpoint, with CSS, scale for EU countries.
MP6210-MN000M010NN	Multi-plane scanner, medium, single interval scale, with Checkpoint, with CSS, scale for OIML countries.
MP6210-MN000M010US	Multi-plane scanner, medium, with single interval scale, with Checkpoint, with CSS, scale for US/Puerto Rico/Guam/USVI/British VI.
MP6210-MN000M01ABE	Multi-plane scanner, Medium with single interval kg scale, with CSS, with Checkpoint, scale Gravity Zone A for Belgium.
MP6210-MN000M01BBE	Multi-plane scanner, Medium with single interval kg scale, with CSS, with Checkpoint, scale Gravity Zone B for Belgium.
MP6210-MN000M01CBE	Multi-plane scanner, Medium with single interval kg scale, with CSS, with Checkpoint, scale Gravity Zone C for Belgium.

Notes:

1. **EU scales are legally accepted in the following countries: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Iceland, Italy, Liechtenstein, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, United Kingdom**

2. **OIML scales are legally accepted in the following countries: Bahamas, Barbados, Belize, Bermuda, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Hong Kong, Jamaica, Saint Lucia, Philippines, Thailand, Trinidad and Tobago, Vietnam**

Table 1-1 *MP6000 Configurations (Continued)*

Configuration	Description
MP6210-MP000M010US	Multi-plane scanner, medium, with single interval scale, with Checkpoint, with CSS, with DL parsing, scale for US.
MP6500-LN000M010CM	Multi-plane scanner, long, with dual interval scale, with Checkpoint, scale for Canada/Mexico.
MP6500-LN000M010EU	Multi-plane scanner, long, with dual interval scale, with Checkpoint, scale for EU.
MP6500-LN000M010NN	Multi-plane scanner, long, with dual interval scale, with Checkpoint, scale for NN.
MP6500-LN000M010US	Multi-plane scanner, long, with dual interval scale, with Checkpoint, scale for US.
MP6500-LP000M010US	Multi-plane scanner, long, with dual interval scale, Drivers License Parsing, with Checkpoint, scale for US.
MP6500-MN000M010CM	Multi-plane scanner, medium, with dual interval scale, with Checkpoint, scale for Canada/Mexico.
MP6500-MN000M010EU	Multi-plane scanner, long, with dual interval scale, with Checkpoint, scale for EU.
MP6500-MN000M010NN	Multi-plane scanner, medium, with dual interval scale, with Checkpoint, scale for NN.
MP6500-MN000M010US	Multi-plane scanner, medium, with dual interval scale, with Checkpoint, scale for US.
MP6500-MP000M010US	Multi-plane scanner, medium, with dual interval scale, Drivers License Parsing, with Checkpoint, scale for US.
MP6510-LN000M010CM	Multi-plane scanner, long, with dual interval scale, with Checkpoint, with CSS, scale for Canada/Mexico.
MP6510-LN000M010EU	Multi-plane scanner, long, with dual interval scale, with Checkpoint, with CSS, scale for EU.
MP6510-LN000M010NN	Multi-plane scanner, long, with dual interval scale, with Checkpoint, with CSS, scale for NN.
MP6510-LN000M010US	Multi-plane scanner, long, with dual interval scale, with Checkpoint, with CSS, scale for US.
MP6510-LP000M010US	Multi-plane scanner, long, with dual interval scale, Drivers License Parsing, with Checkpoint, with CSS, scale for US.

Notes:

1. **EU scales are legally accepted in the following countries: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Iceland, Italy, Liechtenstein, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, United Kingdom**

2. **OIML scales are legally accepted in the following countries: Bahamas, Barbados, Belize, Bermuda, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Hong Kong, Jamaica, Saint Lucia, Philippines, Thailand, Trinidad and Tobago, Vietnam**

Table 1-1 *MP6000 Configurations (Continued)*

Configuration	Description
MP6510-MN000M010CM	Multi-plane scanner, medium, with dual interval scale, with Checkpoint, with CSS, scale for Canada/Mexico.
MP6510-MN000M010EU	Multi-plane scanner, medium, with dual interval scale, with Checkpoint, with CSS, scale for EU.
MP6510-MN000M010NN	Multi-plane scanner, medium, with dual interval scale, with Checkpoint, with CSS, scale for NN.
MP6510-MN000M010US	Multi-plane scanner, medium, with dual interval scale, with Checkpoint, with CSS, scale for US.
MP6510-MP000M010US	Multi-plane scanner, medium, with dual interval scale, Drivers License Parsing, with Checkpoint, with CSS, scale for US.

Notes:

1. **EU scales are legally accepted in the following countries: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Iceland, Italy, Liechtenstein, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, United Kingdom**

2. **OIML scales are legally accepted in the following countries: Bahamas, Barbados, Belize, Bermuda, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Hong Kong, Jamaica, Saint Lucia, Philippines, Thailand, Trinidad and Tobago, Vietnam**

Peripherals

The MP6000 supports the peripheral devices listed below.

Supported Auxiliary Hand-held Scanner

The MP6000 provides auxiliary data ports (USB and RS-232) to which a hand-held scanner can be connected.

NOTE An auxiliary cordless scanner, such as the LI4278, LS4278, or DS6878, can be attached to the MP6000. If a presentation cradle is used with any of these scanners, a separate cradle power supply is required.

IMPORTANT The MP6000 scanner does not configure an auxiliary scanner. Auxiliary scanners must be configured separately, independently of the MP6000 scanner.

EAS Devices

- Sensormatic AMB-9010 controller (available December 2014)
- Sensormatic AMB-9010-IPS controller
- Sensormatic ScanMax-Pro controller
- Checkpoint controller
- Checkpoint with interlock controller.

See *Electronic Article Surveillance (EAS) on page 5-17* for detailed information.

Scale Devices

- OEM standard scale
- Single/dual head Scale Displays.
- Mettler-Toledo price computing scale for parts of Europe (available September 2014).

USB Flash Drives

- Typical USB flash drive with Type A connector. (See *USB Staging Flash Drive on page 5-11*.)

Customer Side Scanner (CSS)

- The CSS (MX101) is an optional integrated device that supports 1D and 2D bar code scanning. The CSS unit replaces the MP6000 tower cover, and can be installed on either side of the MP6000. Refer to the *MX101 PRODUCT REFERENCE GUIDE,* p/n 72E-171320-xx, for installation and configuration information.

Features of the MP6000

The following illustrations of the medium model show the features of the MP6000. See *Table 1-2 on page 1-13* for brief descriptions of all features. See *Controls and Indicators on page 5-2* for detailed descriptions of each feature.

NOTE Refer to the *MX101 Product Reference Guide* (p/n 72E-171320-xx) for information about the optional Customer Side Scanner (CSS). The CSS is shown in its default (left side) position, but it can be moved to the other side at any time - no tools required.

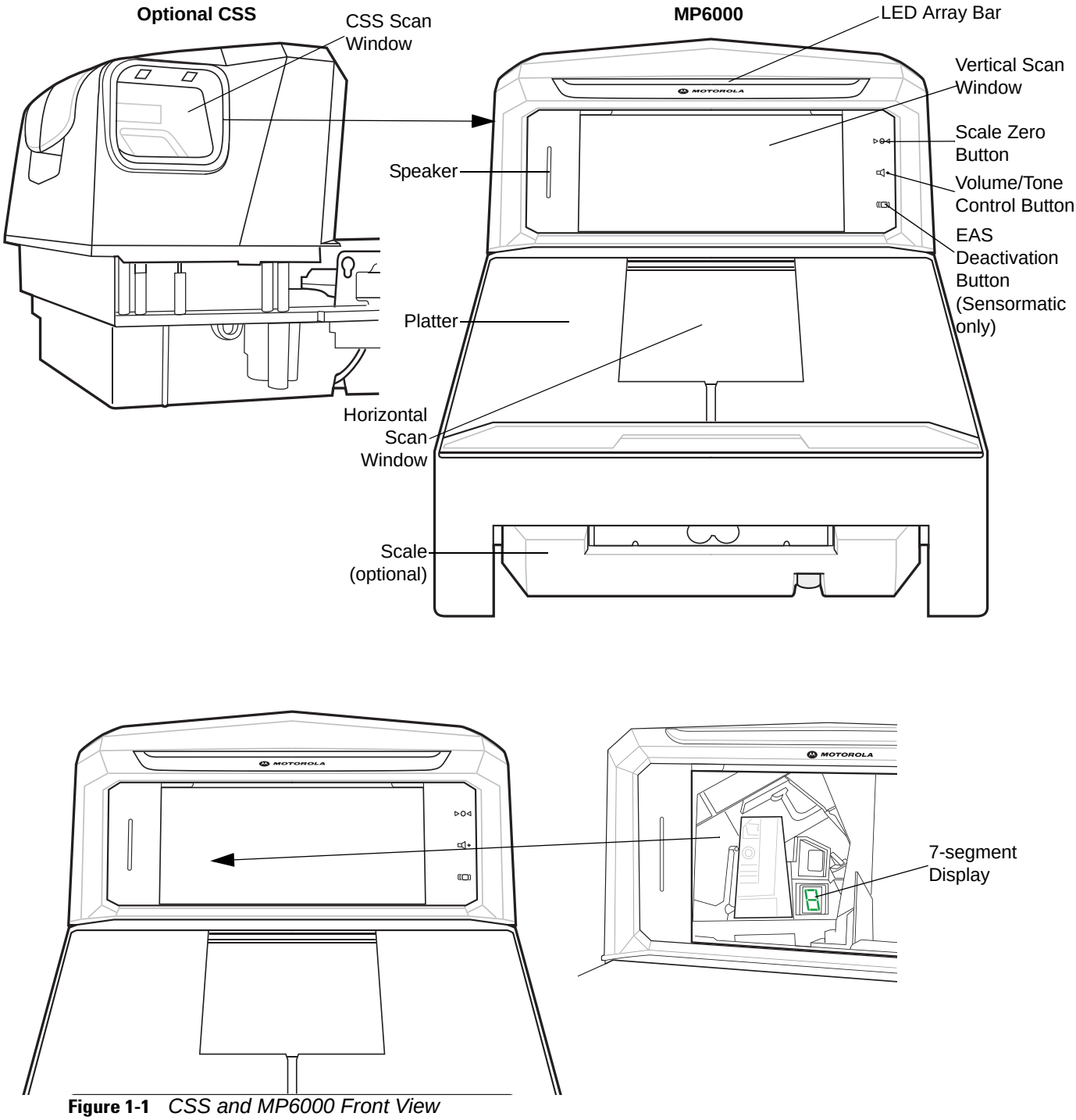


Figure 1-1 *CSS and MP6000 Front View*

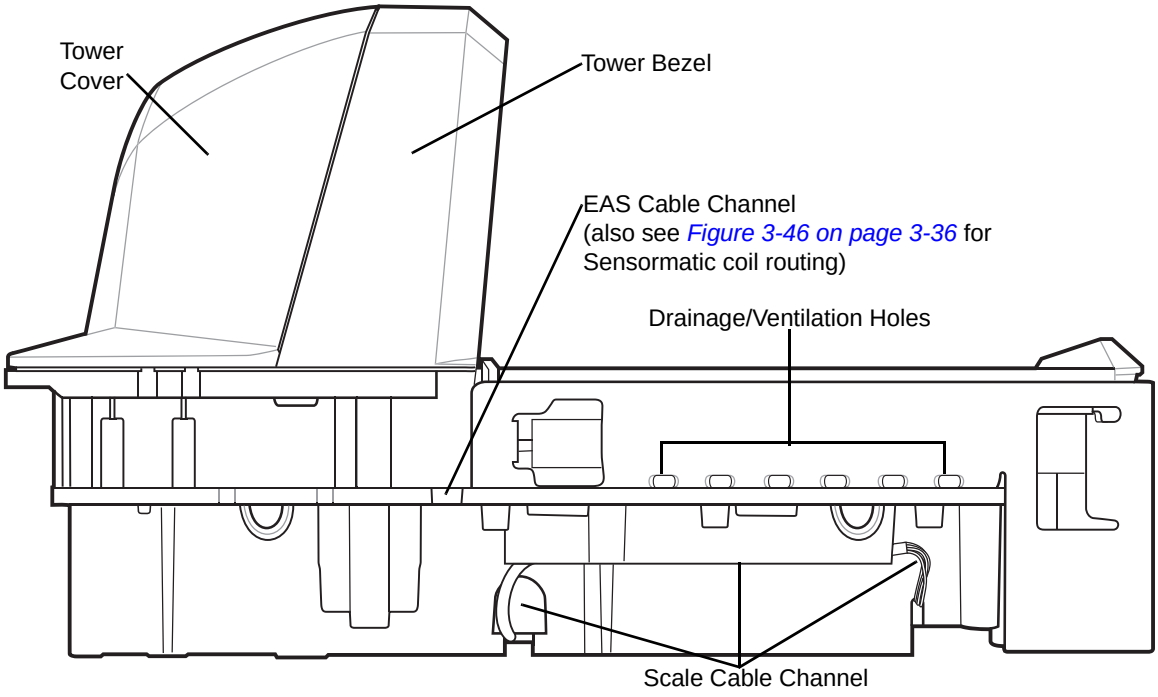


Figure 1-2 *Left Side View*

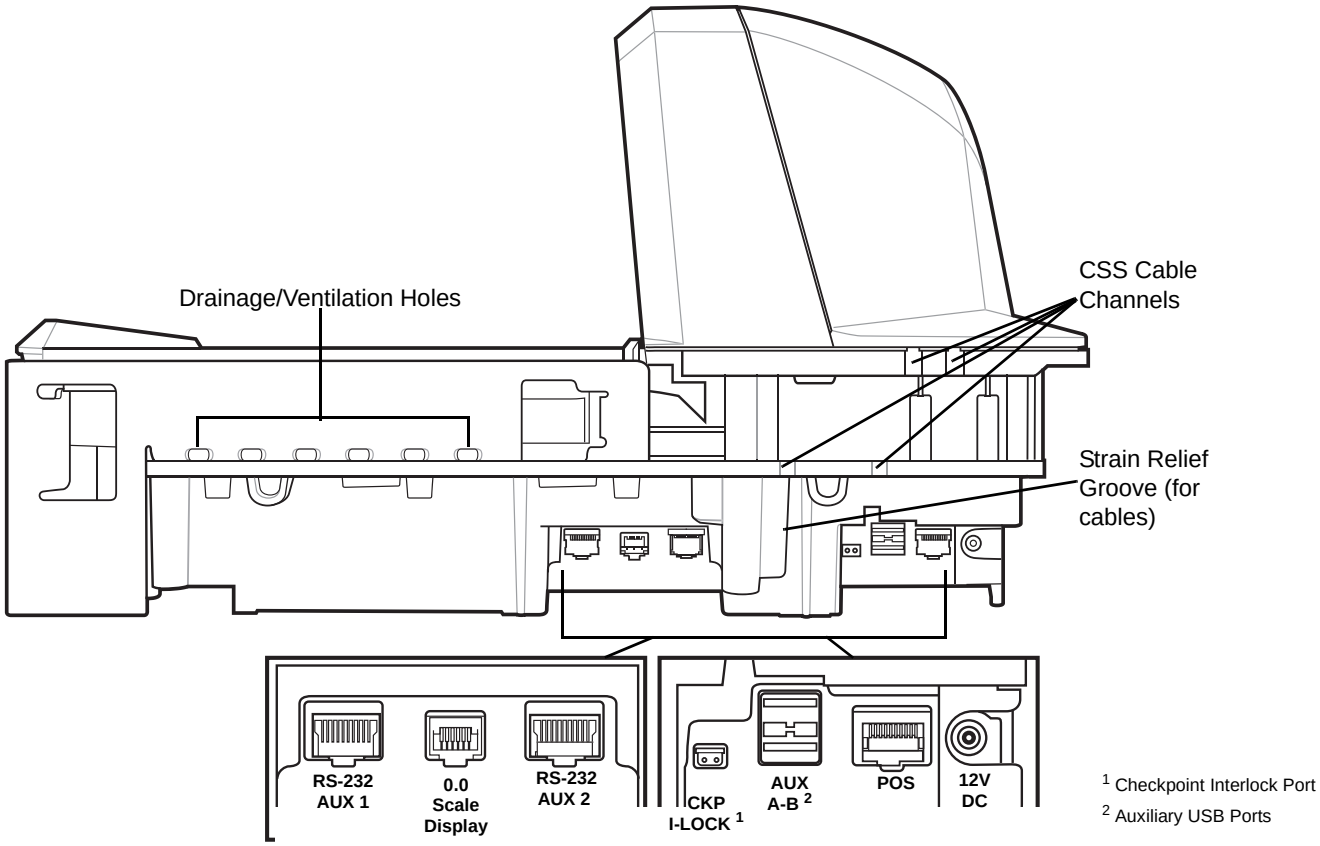


Figure 1-3 *Right Side View/Connector Ports*

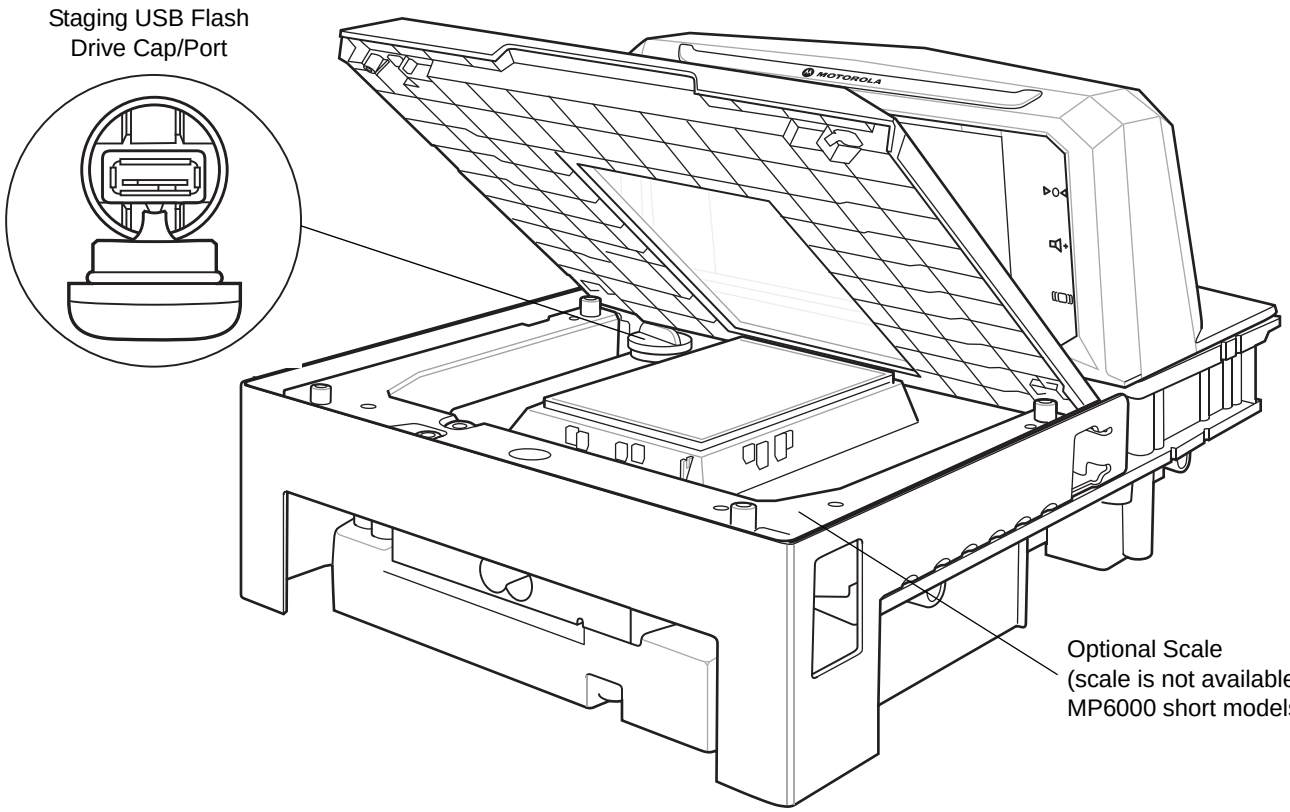


Figure 1-4 *View Under Platter*

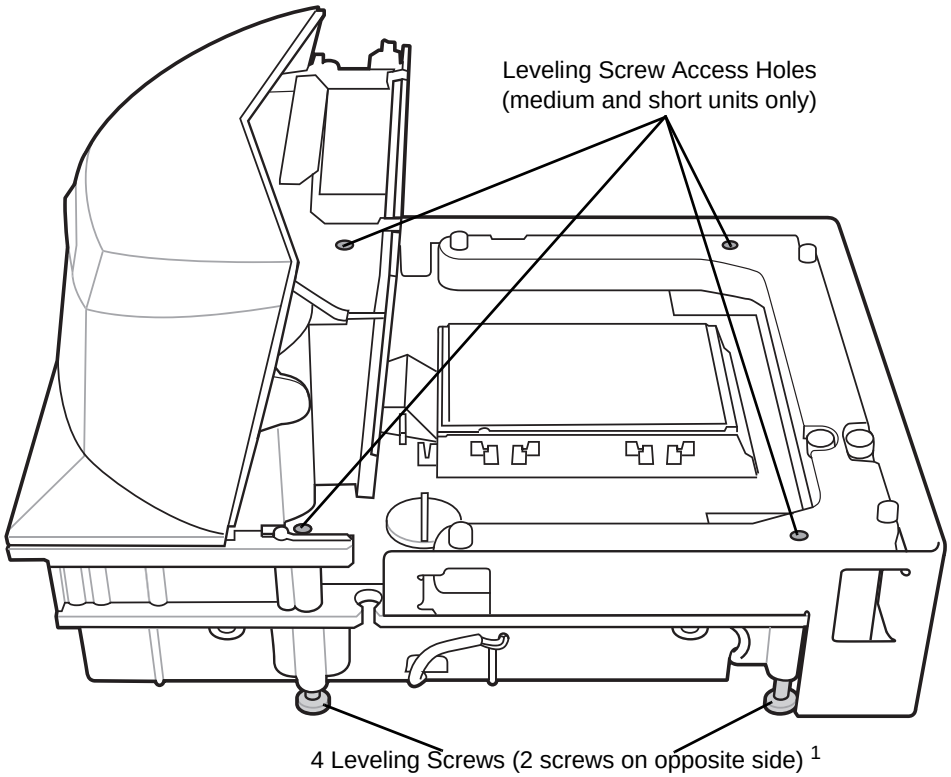


Figure 1-5 *Leveling Screws*

NOTE The tower bezel must be removed, and the Tower Cover slid backwards to access the leveling screws.

[1] Leveling screws are an optional accessory.

To use leveling screws, buy accessory kit MX301-SR00004ZZWR for standard-length screws, or accessory kit MX302-SR00004ZZWR for 1 in. (25 mm) extra length.

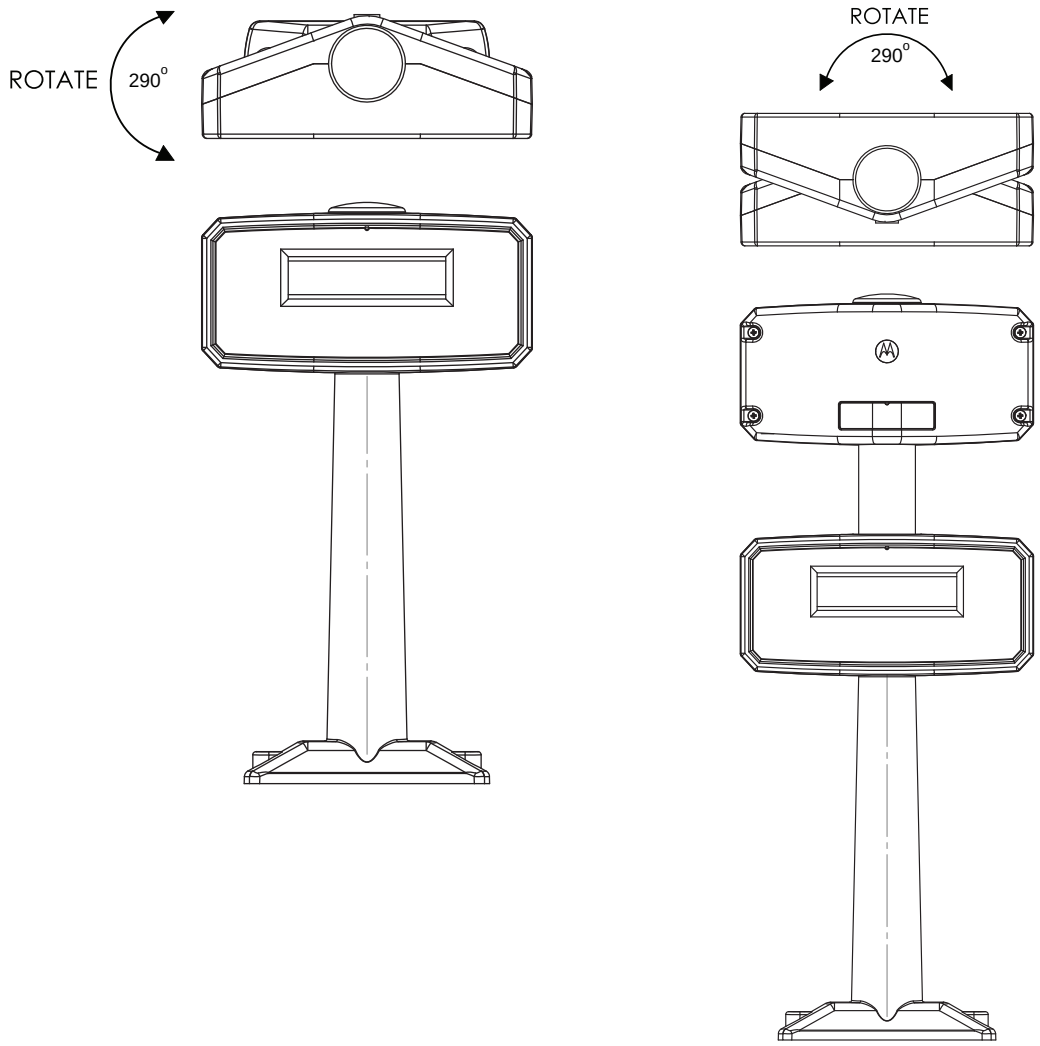


Figure 1-6 *Scale Displays (Some Scanner/Scale Configurations Only) - Single Head (MX201) and Dual Head (MX202; additional head added during installation)*

Optional Leak Platter (European Configurations Only)

The optional leak platter is used to weigh very long or round items. The leek bars prevent the items from falling off the scale.

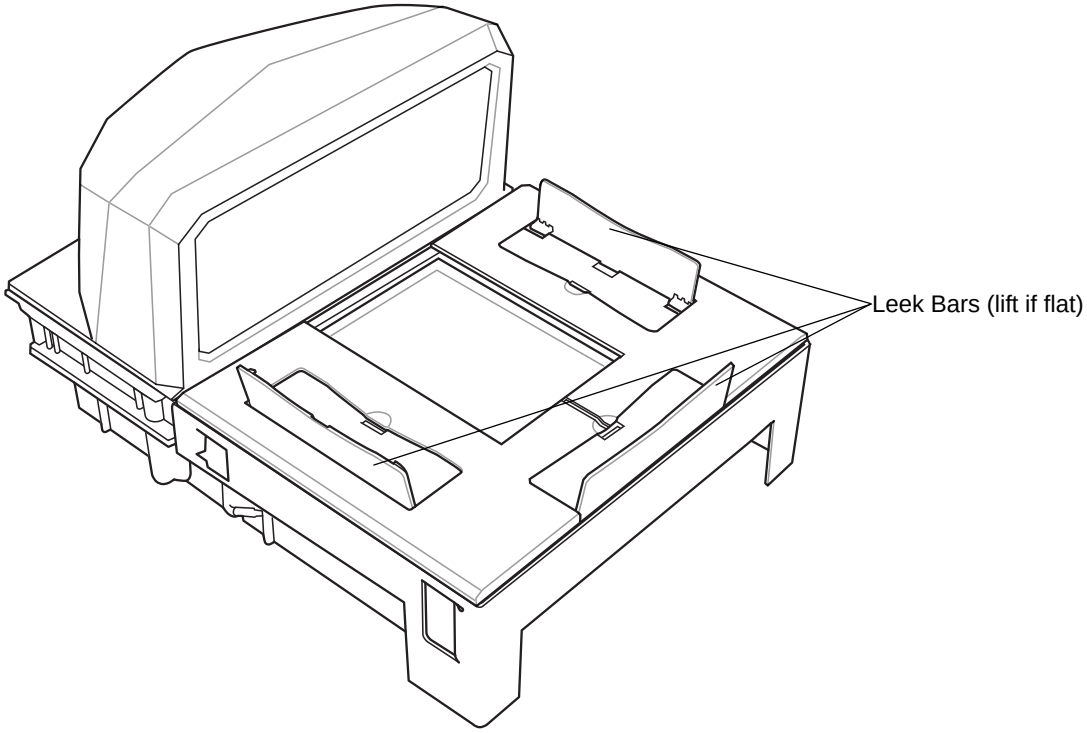


Figure 1-7 *MP6000 with Optional Leak Platter*

Features Summary

Table 1-2 *Features on the MP6000*

Feature	Description	Page
Diagnostic LED/7-segment Display	Internal display provides detailed status, troubleshooting information, and scale legal parameters during calibration.	*5-3*
LED Array Bar	Provides visual feedback for system statuses and alerts.	*5-2*
Scale Zero Button	Scale status LED and touch button provides scale status, and allows user to "zero" the scale.	*5-4*
Volume/Tone Control Button	User selectable settings for audible system indications. (Status LED and button.)	*5-4*
EAS Deactivation Button (Sensormatic only)	Indicates the state of the Sensormatic EAS device, and controls manual deactivation (optional).	*5-5*
Scale (Optional/ Scanner Scale Configurations Only)	Scales are available for the medium length and long length configurations.	*5-6*

Table 1-2 *Features on the MP6000 (Continued)*

Feature	Description	Page
Platter	Stainless steel horizontal scanning surface; imaging window for processing bar code data, and placing items on the surface to determine weight.	*5-7*
Calibration Switch	Used in manual scale calibration (currently unavailable).	n/a
CSS (Optional)	Modular unit that fits into the MP6000 tower; used for customer scanning.	*5-6*
Scale Display	Single or dual display option provides the weight of items on the scale.	*5-6*
Leveling Screws (medium and short models only)	Screws for leveling the MP6000 when shelf mounting is required. Leveling screws are an optional accessory.	*1-11*
Connectors	Connect the MP6000 to peripherals, and POS/host.	*Table 1-3*
Internal USB Cap/Port	The internal USB port is available under the platter.	*1-11*
EAS Cable Channel	Cable routing channel for EAS antennas.	*1-10*
Scale Cable Channel	Cable routing channel for the scale cable.	*1-10*
Drainage/Ventilation Holes	Outlet for spills.	*1-10*
CSS Cable Channels	Channels for routing CSS cables.	*1-10*, *3-16*

Table 1-3 *Description of Connectors*

Port	Description
RS-232 AUX 1 (J7)	See *Table 2-3 on page 2-13* for description.
0.0 (J6)	Scale Display port.
RS-232 AUX 2 (J5)	See *Table 2-3 on page 2-13* for description.
CKP I-LOCK (J4)	Checkpoint EAS Interlock.
AUX A-B (J3)	Dual USB 2.0 full speed ports for auxiliary USB scanners, CSS, or mass storage device. ***NOTE*** An additional USB port is available in the front under the platter. All USB ports can be used for the USB staging flash drive. See *Table 2-14 on page 2-54* and *USB Staging Flash Drive on page 5-11* for more information.
POS (J2)	Point of Sale terminal port.
12V DC (J1)	External power input. 12V / 3.33A (not required if powered from terminal). ***NOTE*** If a power supply plug is inserted to the J1 connector, with no voltage to the power supply, the scanner will not power up.

CHAPTER 2 HOST INTERFACES AND CABLE PINOUTS

Overview

This chapter describes the host interfaces supported by the MP6000, and how to connect the MP6000 to a host. It also include host interface bar codes. See *Figure 1-1 on page 1-9* for locations of the interface connectors.

OPOS/JAVAPOS settings are outside the scope of this guide. For the Zebra SDK, go to: www.motorolasolutions.com/windowssdk.

NOTE SDK supported functionality by communication protocol is listed in *Appendix E, COMMUNICATION PROTOCOLS*.

Interfaces, Components, and Communication

The MP6000 supports the following.

POS Interfaces and Host Communication

IMPORTANT Avoid inserting a POS cable in the AUX 1 or AUX 2 port.

- USB 2.0 full speed using Zebra USB multi-host cables
- RS-232 connection using several communication protocols.
- RS-485 communication protocol.

NOTE SDK supported functionality by communication protocol is listed in *Appendix E, COMMUNICATION PROTOCOLS*.

Auxiliary Ports and Peripherals

- Three USB 2.0 full speed auxiliary ports (see *AUX A-B (Stacked USB)* on page *2-54*).
- Two RS-232 auxiliary ports (AUX 1/AUX 2; see *Figure 1-3 on page 1-10*).

The MP6000 can support the following combinations of peripherals:

- Hand-held scanners supported in USB mode, or RS-232 mode.
- CSS (CSS is USB only).

NOTE A total of one hand-held scanner plus one CSS is supported.

- Wireless auxiliary scanner support may be provided via a corded cradle as an auxiliary device.

An auxiliary cordless scanner, such as the LI4278, LS4278, or DS6878, can be attached to the MP6000. If a standard cradle is used with the DS6878, a separate cradle power supply is required.

- Sensormatic controller via the RS-232 auxiliary port.

IMPORTANT Use only Zebra approved cables when connecting peripherals to the ports on the MP6000.

- Dual cable scanner/scale: Via RS-232 AUX 1, or RS-232 AUX 2 ports (see *Figure 1-3 on page 1-10*, and *Table 2-3 on page 2-13*).

Programming Management Tools

- 123Scan^2 (see *Chapter 6, 123SCAN2*)
- SMS
- Staging flash drive reprogramming (USB memory stick)

NOTE Only Zebra hand-held scanners can be managed via 123Scan^2 (see *Chapter 6, 123SCAN2*), and SMS through the MP6000 scanner.

Application Programming Interfaces

- Zebra scanner SDK APIs (CoreScanner APIs)

  NOTE SDK supported functionality by communication protocol is listed in *Appendix E, COMMUNICATION PROTOCOLS*.

- Zebra scanner OPOS/JPOS APIs.

For access to these programming interfaces, go to: www.motorolasolutions.com/windowssdk.

NOTE If the MP6000 is powered up with no interface cable present, it reverts to “no host mode.” This is useful for demonstrations where no host is present.

Connecting a USB Interface

NOTE For a list of supported scanner functionality by communication protocol *Appendix E, COMMUNICATION PROTOCOLS*.

The MP6000 connects directly to a USB host. An additional power supply may be required (PWRS-14000-148R). Only a USB Power Plus host can power the MP6000 using a Zebra Power Plus cable, without an external power supply.

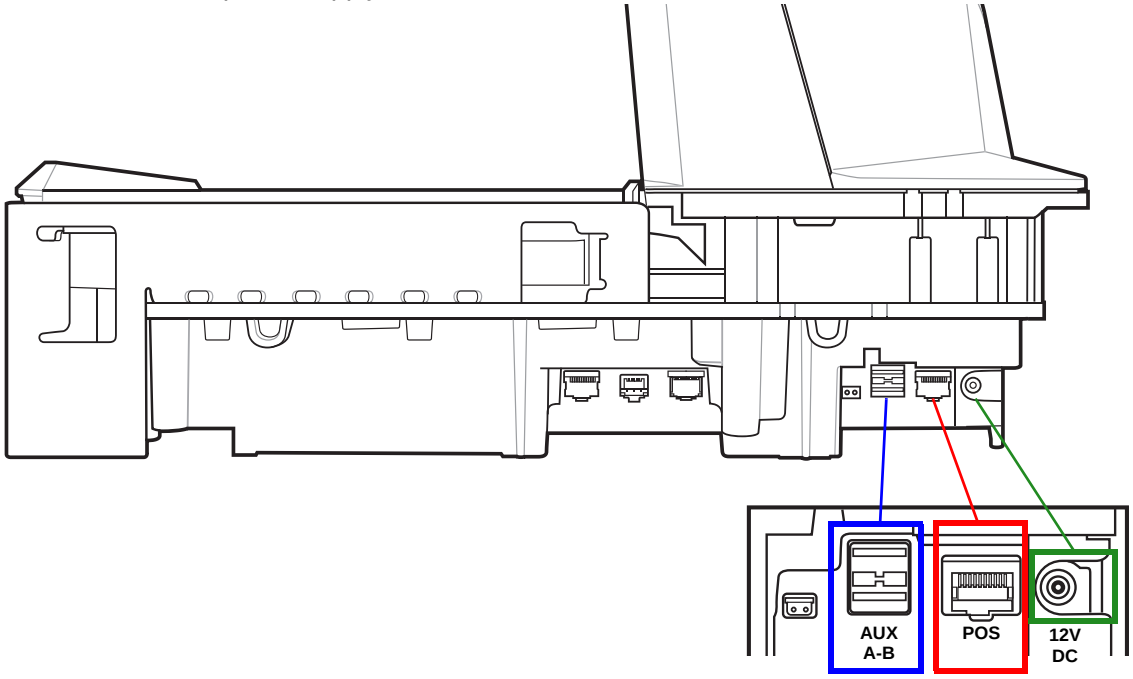


Figure 2-1 *USB Connections*

NOTE Interface cables vary depending on configuration.

There are three possible USB connection methods for the MP6000:

- POS connection using USB Power Plus (12V); requires a CBA-U52-S16PAR cable between POS equipment (e.g., IBM) and the MP6000 POS RJ-45 connector. The MP6000 is a USB device for this connection; no power supply is required (the MP6000 draws power from USB cable).
- POS connection using USB Standard A (5V); requires a CBA-U51-S16ZAR cable between POS equipment (standard device - PC) and MP6000 POS RJ-45 connector. The MP6000 is USB device but requires an external power supply (MP6000 does NOT draw power from USB cable).
- AUX scanner connection using a Zebra USB hand-held scanner; requires a Zebra USB type A cable between the Zebra USB hand-held scanner (RJ-45), and the MP6000 AUX A-B USB port. The MP6000 is the USB host, and the Zebra scanner is the USB device which draws power from 5V cable.

To set up the MP6000:

1. Connect the RJ-45 modular connector of the USB interface cable to the POS interface port on the MP6000.
2. Plug the series A connector, or the Power Plus connector in the USB host. If Power Plus is used, the MP6000 powers up with the POS.
3. If no Power Plus is used, connect a 12V power supply. Connecting the 12V power supply immediately turns the unit on.
4. Select the USB device type by scanning the appropriate bar code (see *USB Device Type on page 2-6*).
5. To modify any parameter options:
   a. Scan the appropriate bar codes in the *MP6000 Bar Code Programming Guide*, p/n 72E-172633-xx.

      or

   b. Use 123Scan^2.

      or

   c. Use the 123Scan^2 2D configuration bar code.

      or

   d. Use a USB staging flash drive (see *USB Staging Flash Drive on page 5-11*).

USB Host Parameters

USB Device Type

To select a USB device type, scan one of the bar codes listed in *Table 2-1*.

NOTE 1. When changing USB device types, the MP6000 automatically resets and issues the standard startup beep sequences.

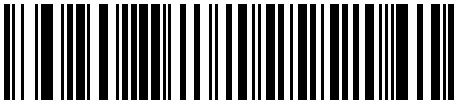
2. Before selecting CDC COM Port Emulation, install the Zebra USB CDC driver on the host to ensure the scanner does not stall during power up (due to a failure to enumerate USB). If the scanner stalls, recover it by installing the CDC INF file, and reboot the MP6000.

NOTE This guide includes limited parameter bar codes. For ALL MP6000 programming bar codes, refer to the *MP6000 Bar Code Programming Guide (*p/n 72E-172633-xx).

Table 2-1 *USB Host Parameters*

Parameter	Page Number
USB Device Type	
IBM Table-top USB (default)	*2-7*
IBM Hand-held USB	*2-8*
IBM OPOS (IBM Hand-held USB with Full Scan Disable)	*2-9*
HID Keyboard Emulation	*2-10*
CDC COM Port Emulation	*2-11*

USB Device Type (continued)

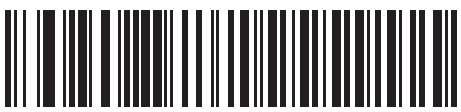


*** IBM Table-top USB**

USB Device Type (continued)

IBM Hand-held USB

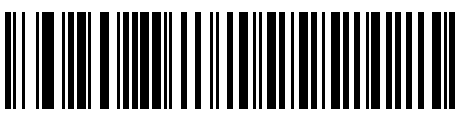
USB Device Type (continued)



IBM OPOS
(IBM Hand-held USB with Full Scan Disable)

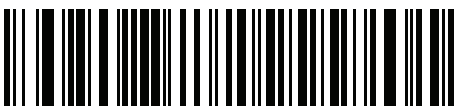
USB Device Type (continued)

✓ When the HID Keyboard host is selected, and the MP6000 has auxiliary scanners connected, use ADF rules to program the auxiliary scanners to add a 500 msec pause to the end of the data to prevent the interleaving of bar code data from multiple scanners. This works with standard RS-232, and SSI over RS-232 (with the Send Raw Decode Data setting).



HID Keyboard Emulation

USB Device Type (continued)



CDC COM Port Emulation

Connecting an RS-232 Interface

NOTE For a list of supported scanner functionality by communication protocol *Appendix E, COMMUNICATION PROTOCOLS*.

MP6000 Scanner Only or MP6200/6500 Scale with Single Cable Protocol

Use the RS-232 interface to connect the MP6000 to POS devices, host computers, or other devices with an available RS-232 port (e.g., com port).

NOTE The MP6000 uses +/-6V RS-232 signal levels to accommodate long cable lengths, and increased noise immunity.

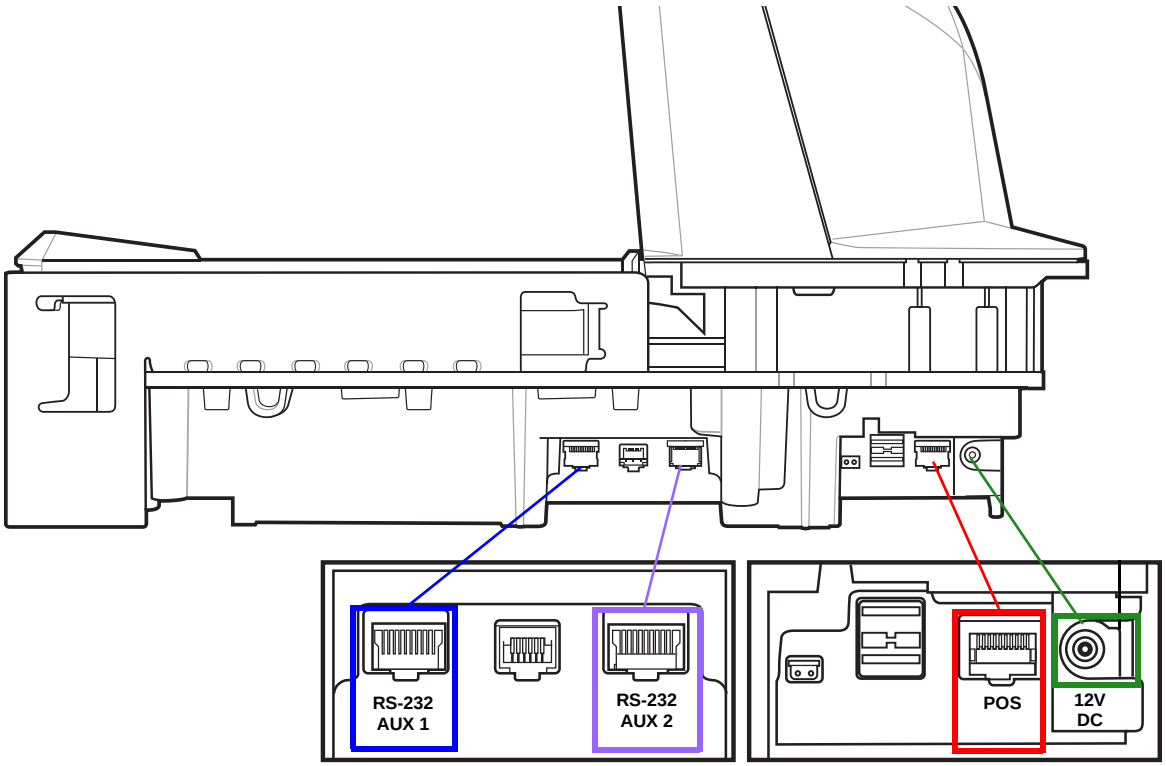


Figure 2-2 *RS-232 Connections.*

NOTE Interface cables vary depending on configuration.

Table 2-2 *Host Connections*

Port	Connection Options			
POS	Unpowered USB (p/n CBA-U51-S16ZAR)	Powered USB (p/n CBA-U52-S16PAR)	RS-232 (p/n CBA-R51-S16ZAR)	RS-485 (p/n CBA-M51-S16PAR)

Table 2-3 *Auxiliary Connections*

Configuration Choices for the Devices Below	RS-232 Device Port Configuration Value (see parameter 1246 page 2-32)	Connect Device to These Ports			
		AUX 1	AUX 2	USB2	USB3
RS-232 auxiliary scanner, and a Sensormatic Controller [3]	0 [1]	Sensormatic Controller	RS-232 auxiliary scanner [3]	USB auxiliary scanner [3]	USB auxiliary scanner [3]
RS-232 auxiliary scanner, and a Dual Cable Scanner/Scale [3]	1	Dual Cable Scanner/Scale [2]	RS-232 auxiliary scanner [3]	USB auxiliary scanner [3]	USB auxiliary scanner [3]
Dual Cable Scanner/Scale, and a Sensormatic Controller [3]	2	Sensormatic Controller	Dual Cable Scanner/Scale [2]	USB auxiliary scanner [3]	USB auxiliary scanner [3]
Third-Party-Scale & Sensormatic-Controller	4	Third-Party-Scale	Sensormatic Controller	USB auxiliary scanner[3]	USB auxiliary scanner[3]

[1] Default setting
[2] The Dual Cable Scanner/Scale protocol is 'SASI'
[3] In all configurations up to one or two additional USB auxiliary scanners can be connected, but the total RS-232 auxiliary scanners plus USB auxiliary scanners cannot exceed two. An auxiliary scanner is not counted until it is attached.

Price Computational Scale Interface Circuit Drawing

Price Computational Scale Interface available on AUX 1. (Also see *Third Party Scale on page 2-37*.)

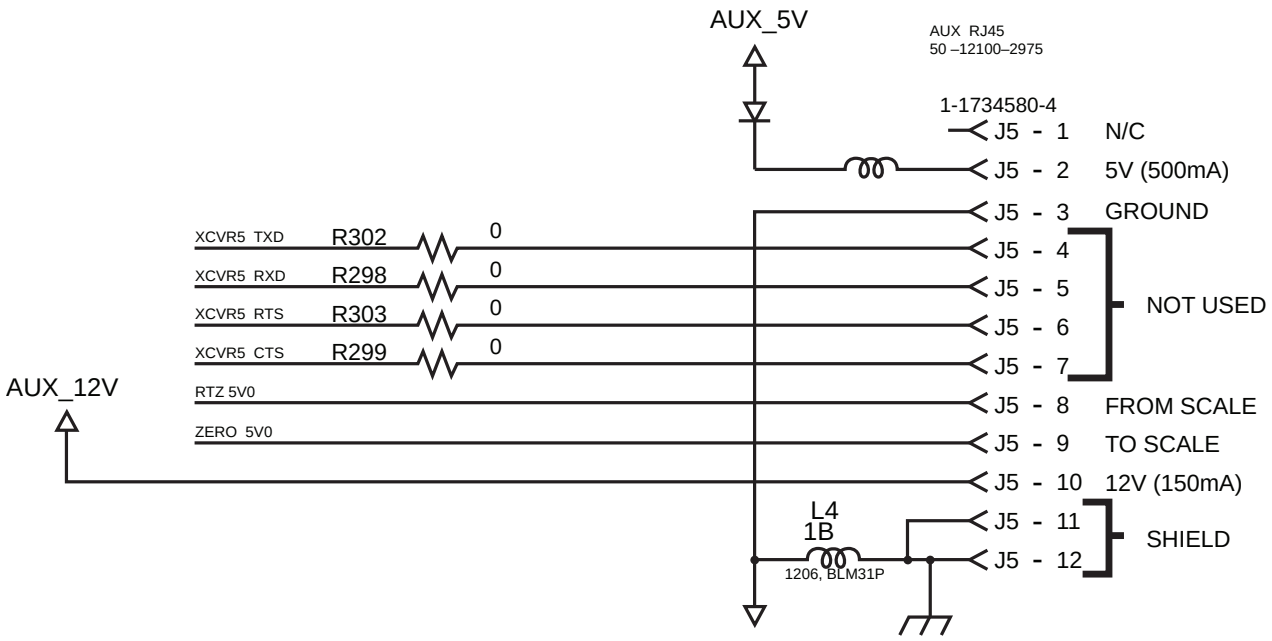


Figure 2-3 ***Price Computational Scale Interface***

Connect MP6000 to RS-232 Host

To connect the MP6000 to an RS-232 host:

1. Connect the modular connector of the RS-232 interface cable to the POS interface port on the MP6000.
2. Connect the other end of the RS-232 interface cable to the serial port on the host.
3. Connect a 12V power supply directly to the MP6000.
4. Select the RS-232 host type by scanning the appropriate bar code (see *RS-232 Host Types on page 2-20*). If your host does not appear in the terminal specific tables, refer to the documentation for the host device to set communication parameters to match the host.
5. To modify any other parameter options, scan the appropriate bar codes in the *MP6000 Bar Code Programming Guide*, p/n 72E-172633-xx.

MP6000 with a Dual Cable Scanner/Scale

Use the RS-232 interface to connect the MP6000 to POS devices, host computers, or other devices with an available RS-232 port (e.g., com port). Then use a second RS-232 cable (p/n CBA-R51-S16ZAR, and CBA-R52-S16ZAR) to connect the MP6000 Dual Cable Scanner/Scale AUX port to a scale-only port on the POS device.

The Dual Cable Scanner/Scale interface supports the industry standard SASI scale-only protocol, and communicates with a POS using a 9600 baud rate, 7 data bits, and even parity.

To set up the MP6000 and Dual Cable Scanner/Scale:

1. Attach the RJ-45 modular connector of the RS-232 scanner interface cable to the POS port on the MP6000. Connect the other end of the RS-232 scanner interface cable to the serial scanner port on the host.
2. Attach the RJ-45 end of the RS-232 slave interface cable to AUX 2 (see *Figure 1-3 on page 1-10*) on the MP6000. Connect the other end of the RS-232 interface cable to the scale-only port on the host.
3. Connect the power supply directly to the MP6000.
4. Select the RS-232 scanner host type by scanning the appropriate bar code (see *RS-232 Host Types on page 2-20*). If your host does not appear in the terminal specific tables, refer to the documentation for the host device to set communication parameters to match the host. To modify any other parameter options, scan the appropriate bar codes in the *MP6000 Bar Code Programming Guide*, p/n 72E-172633-xx.
5. The protocol on this Dual Cable Scanner/Scale port is SASI.
6. Select the device port configuration by scanning the appropriate bar code (refer to the *MP6000 Bar Code Programming Guide* for RS-232 device port configuration).
7. Cycle power on the MP6000.

RS-232 Parameters

NOTE This guide includes limited parameter bar codes. For ALL MP6000 programming bar codes, refer to the *MP6000 Bar Code Programming Guide (*p/n 72E-172633-xx).

Table 2-4 *RS-232 Host Parameters*

Parameter	Page Number
RS-232 Host Type	
Standard RS-232 (default)	*2-21*
ICL RS-232	*2-22*
Wincor-Nixdorf RS-232 Mode A	*2-23*
Wincor-Nixdorf RS-232 Mode B	*2-24*
Olivetti ORS4500	*2-25*
Omron	*2-26*
OPOS/JPOS	*2-27*
Fujitsu RS-232	*2-28*
CUTE	*2-29*
NCR Variant	*2-30*
Datalogic Variant	*2-31*
RS-232 Device Port Configuration	
AUX 1 Sensormatic and AUX 2 RS-232 Scanner (default)	*2-33*
Third Party Scale	
Disable Third Party Scale (default - Disable)	*2-38*
Third Party Scale LED Pin (default - Active High)	*2-40*
Third Party Scale Zero Pin (default - Active High)	*2-42*

RS-232 Host Parameters

Various RS-232 hosts use their own parameter default settings. Selecting standard, ICL, Fujitsu, Wincor-Nixdorf Mode A, Wincor-Nixdorf Mode B, OPOS/JPOS, Olivetti, Omron, Common Use Terminal Equipment (CUTE-LP/LG bar code readers), NCR, or Datalogic sets the defaults listed in *Table 2-5* and *Table 2-6*.

NOTE All items listed in *Table 2-5* and *Table 2-6* are for scanner only connections, except for NCR which can support scanner and scale.

Table 2-5 *Terminal Specific RS-232*

Parameter	ICL	Fujitsu	Wincor-Nixdorf Mode A	Wincor-Nixdorf Mode B/OPOS/JPOS
Baud Rate	9600	9600	9600	9600
Parity	Even	None	Odd	Odd
Stop Bit Select	One	One	One	One
ASCII Format	8-Bit	8-Bit	8-Bit	8-Bit
Hardware Handshaking	RTS/CTS Option 3	None	RTS/CTS Option 3	RTS/CTS Option 3
Software Handshaking	None	None	None	None
Serial Response Timeout	9.9 Sec.	2 Sec.	None	None
RTS Line State	High	Low	Low	Low = No data to send
Beep On <BEL>	Disable	Disable	Disable	Disable
Transmit Code ID	Yes	Yes	Yes	Yes
Data Transmission Format	Data/Suffix	Data/Suffix	Data/Suffix	Data/Suffix
Prefix	None	None	None	None
Suffix	CR (1013)	CR (1013)	CR (1013)	CR (1013)

In the Nixdorf Mode B, if CTS is low, scanning is disabled. When CTS is high, scanning is enabled. If you scan Nixdorf Mode B without connecting the digital scanner to the proper host, it may appear unable to scan. If this happens, scan a different RS-232 host type within 5 seconds of cycling power to the digital scanner.

RS-232 Host Parameters (continued)

Table 2-6 *Terminal Specific RS-232*

Parameter	Olivetti	Omron	CUTE	NCR (Single Cable Scale)	Datalogic
Baud Rate	9600	9600	9600	9600	9600
Parity	Even	None	Even	Odd	Odd
Stop Bit Select	One	One	One	One	One
ASCII Format	7-Bit	8-Bit	7-Bit	7-Bit	7-Bit
Hardware Handshaking	None	None	None	None	None
Software Handshaking	ACK/NAK	None	None	None	None
Serial Response Timeout	9.9 Sec.	9.9 Sec.	9.9 Sec.	9.9 Sec.	9.9 Sec.
RTS Line State	Low	High	High	High	High
Beep On <BEL>	Disable	Disable	Disable	Disable	Enable
Transmit Code ID	Yes	Yes	Yes	Yes	Yes
Data Transmission Format	Prefix/Data/Suffix	Data/Suffix	Prefix/Data/ Suffix	Prefix/ Suffix *	Data/Suffix
Prefix	STX (1002)	None	STX (1002)	STX *	None
Suffix	ETX (1003)	CR (1013)	CR (1013) ETX (1003)	ETX *	CR (1013)

The CUTE host disables all parameter scanning, including Set Defaults. If you inadvertently select CUTE, scan Enable Parameter Bar Code Scanning (located in the MP6000 Bar Code Programming Guide) then change the host selection.

RS-232 Host Parameters (continued)

Selecting ICL, Fujitsu, Wincor-Nixdorf Mode A, Wincor-Nixdorf Mode B, OPOS/JPOS, Olivetti, Omron, Common Use Terminal Equipment (CUTE-LP/LG bar code readers), NCR, or Datalogic enables the transmission of code ID characters listed in *Table 2-7* and *Table 2-8*. These code ID characters are not programmable and are separate from the Transmit Code ID feature. Do not enable the Transmit Code ID feature for these terminals.

Table 2-7 *Terminal Specific Code ID Characters*

Code Type	ICL	Fujitsu	Wincor-Nixdorf Mode A	Wincor-Nixdorf Mode B/ OPOS/JPOS
UPC-A	A	A	A	A
UPC-E	E	E	C	C
EAN-8/JAN-8	FF	FF	B	B
EAN-13/JAN-13	F	F	A	A
Bookland EAN	F	F	A	A
Code 39	C <len>	None	M	M
Code 39 Full ASCII	None	None	M	M
Trioptic	None	None	None	None
Code 32	None	None	None	None
Codabar	N <len>	None	N	N
Code 128	L <len>	None	K	K
GS1-128	L <len>	None	P	P
Code 93	None	None	L	L
I 2 of 5	I <len>	None	I	I
D 2 of 5	H <len>	None	H	H
MSI	None	None	O	O
IATA	H<len>	None	H	H
GS1 Databar Variants	None	None	E	E
PDF417	None	None	Q	Q
MicroPDF417	None	None	S	S
Data Matrix	None	None	R	R
QR Codes	None	None	U	U
Aztec/Aztec Rune	None	None	V	V

*** 2D bar codes are not supported.**

Table 2-8 *Terminal Specific Code ID Characters*

Code Type	Olivetti	Omron	CUTE	NCR	Datalogic
UPC-A	A	A	A	**A**	**A**
UPC-E	C	E	None	E	E
EAN-8/JAN-8	B	FF	None	FF	FF
EAN-13/JAN-13	A	F	A	F	F
Bookland EAN	A	F	None	None	None
Code 39	M <len>	C <len>	3	B1	*
Code 39 Full ASCII	None	None	3	None	None
Trioptic	None	None	None	None	$T
Code 32	None	None	None	None	AE
Codabar	N <len>	N <len>	None	None	%
Code 128	K <len>	L <len>	5	B3	#
GS1-128	P <len>	L <len>	5	None	None
Code 93	L <len>	None	None	None	&
I 2 of 5	I <len>	I <len>	1	B2	i
D 2 of 5	H <len>	H <len>	2	None	None
MSI	O <len>	None	None	None	@
IATA	H<len>	H<len>	2	None	IA
GS1 Databar Variants	None	None	None	]e0	GS1 Databar - R4 GS1 Databar Limited - RL GS1 Databar Expanded - RX
PDF417	None	None	6	n/a*	P
MicroPDF417	None	None	6	n/a*	mP
Data Matrix	None	None	4	n/a*	Dm
QR Codes	None	None	7	n/a*	QR
Aztec/Aztec Rune	None	None	8	n/a*	Az

*** 2D bar codes are not supported with NCR.**

RS-232 Host Types

To select an RS-232 host interface, scan one of the following bar codes.

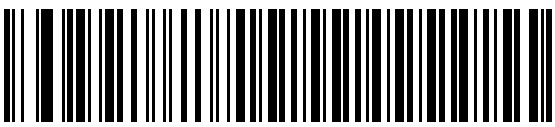
NOTES 1. Scanning **Standard RS-232** activates the RS-232 driver, but does not change port settings (e.g., parity, data bits, handshaking). Selecting another RS-232 host type bar code changes these settings.

2. The CUTE host disables all parameter scanning, including Set Defaults. If you inadvertently select CUTE, scan **Enable Parameter Bar Code Scanning** (located in the MP6000 Bar Code Programming Guide) then change the host selection.

Options:

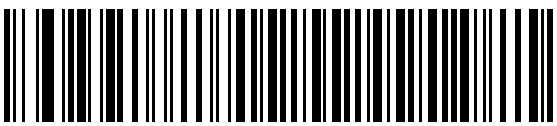
- *Standard RS-232 (default)
- ICL RS-232
- Wincor-Nixdorf RS-232 Mode A
- Wincor-Nixdorf RS-232 Mode B
- Olivetti ORS4500
- Omron
- OPOS/JPOS
- Fujitsu RS-232
- CUTE
- NCR Variant (both scanner only and scanner/scale versions)
- Datalogic Variant.

RS-232 Host Types (continued)



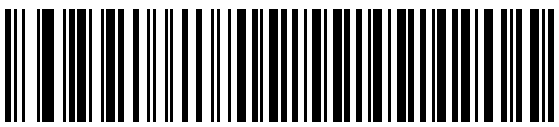
*Standard RS-232

RS-232 Host Types (continued)



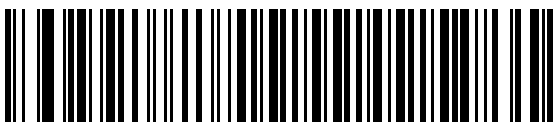
ICL RS-232

RS-232 Host Types (continued)



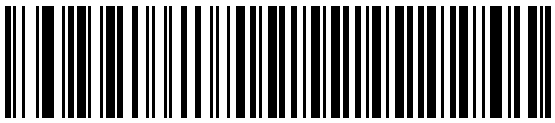
Wincor-Nixdorf RS-232 Mode A

RS-232 Host Types (continued)



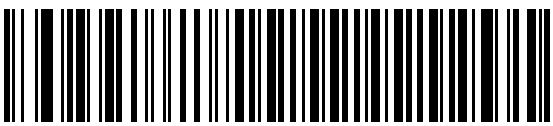
Wincor-Nixdorf RS-232 Mode B

RS-232 Host Types (continued)



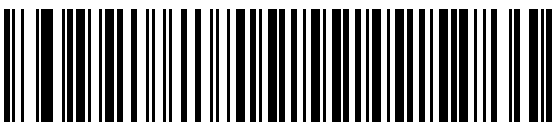
Olivetti ORS4500

RS-232 Host Types (continued)



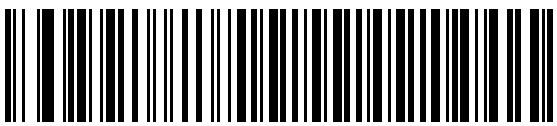
Omron

RS-232 Host Types (continued)



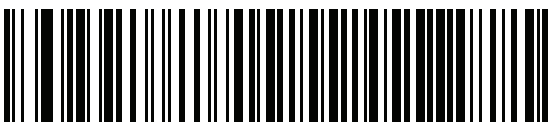
OPOS/JPOS

RS-232 Host Types (continued)



Fujitsu RS-232

RS-232 Host Types (continued)



CUTE [2]

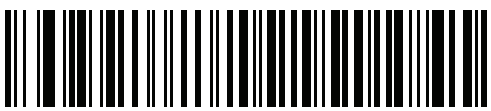
RS-232 Host Types (continued)

RS-232 Host -NCR Variant

Scan the bar code below to enable the NCR variant of the RS-232 host.

IMPORTANT There are several parameter options available with the NCR variant for RS-232. Refer to the *MP6000 Bar Code Programming Guide, p/n 72E-172633-xx* to manage the following NCR related parameters:

- NCR Use Prefix
- NCR Prefix
- NCR Suffix
- NCR Use BCC
- NCR Interface.



NCR Variant

RS-232 Host Types (continued)

RS-232 Host -Datalogic Variant

Scan the bar code below to enable the Datalogic variant of the RS-232 host.

Datalogic Variant

RS-232 Device Port Configuration

Parameter # 1246

This option allows the user to select which devices to attach to the MP6000, and to which port they are attached. Scan the appropriate bar codes that follow to select the proper configuration. The available configurations are:

- 0 = AUX 1 Sensormatic, and AUX 2 RS-232 Scanner (default)
- 1 = AUX 1 Dual Cable Scale, and AUX 2 RS-232 Scanner
- 2 = AUX 1 Sensormatic, and AUX 2 Dual Cable Scale
- 4 = AUX 1 Third Party Scale, AUX 2 Sensormatic.

For Zebra hand-held scanners, configure the auxiliary scanner for a standard RS-232 interface with a Baud Rate of 9600, 8 Data Bits, 1 Stop Bit, and No Parity. Refer to the Auxiliary Scanner Parameters section in the *MP6000 Bar Code Programming Guide*, p/n 72E-172633-xx. for alternate settings.

Changes to this parameter do not take effect until the next power cycle (power cycling does not apply to 123Scan^2). For that reason always remember to perform one of the functions below after scanning a device port parameter.

- Cycle power to the scanner (disconnect, and re-connect scanner cable).

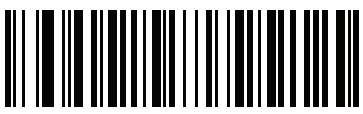
  or

- Use the MP6000 **Reset** button (button combination to reboot the MP6000).

When selecting any of the device port configuration options, ensure the devices connected to the MP6000 correctly match the devices defined for the option. For example, if option 1 is scanned, only a dual cable scale should be connected to the AUX 1 port, and an RS-232 scanner should be connected to the AUX 2 port. Turning on the MP6000 with connected devices that do not match the option can result in communication failures. To ensure successful operation the proper sequence for setting this option is as follows.

1. Power off the MP6000 (disconnect the power cable).
2. Disconnect all RS-232 devices (RS-232 scanner, Sensormatic, and/or dual cable scale).
3. Power on the MP6000(reconnect the power cable).
4. Scan the appropriate bar code option that matches the intended configuration.
5. Power off the MP6000.
6. Connect the appropriate devices.
7. Power on the MP6000.

RS-232 Device Port Configuration (continued)

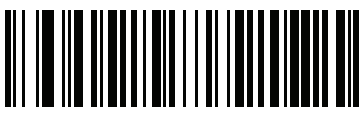


***AUX 1 Sensormatic and AUX 2 RS-232 Scanner (00h)**

RS-232 Device Port Configuration (continued)

AUX 1 Dual Cable Scale and AUX 2 RS-232 Scanner (01h)

RS-232 Device Port Configuration (continued)



AUX 1 Sensormatic and AUX 2 Dual Cable Scale (02h)

RS-232 Device Port Configuration (continued)

AUX 1 Third Party Scale, AUX 2 Sensormatic (04h)

Third Party Scale Parameters

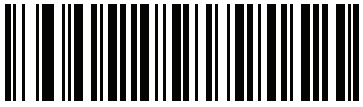
Third Party Scale

Parameter # 1294

Enable or disable **Third Party Scale** functionality. When disabled **Third Party Scale LED Pin** (parameter # 1295) and **Third Party Scale Zero Pin** (parameter # 1296) are ignored/overridden. (Also see *Price Computational Scale Interface Circuit Drawing on page 2-13*.)

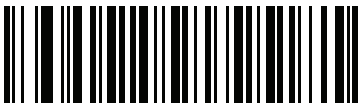
Options:

- Enable Third Party Scale
- *Disable Third Party Scale.



Enable Third Party Scale
(1)

Third Party Scale (continued)



*** Disable Third Party Scale**
(0)

Third Party Scale LED Pin

Parameter # 1295

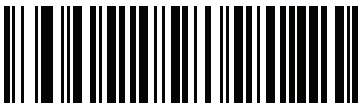
This parameter defines the polarity of the LED/Tare input pin that illuminates the scale LED. This parameter has no effect if **Third Party Scale** (parameter # 1294) is disabled.

Options:

- Active Low
- *Active High.

Active Low
(0)

Third Party Scale LED Pin (continued)



***Active High**
(1)

Third Party Scale Zero Pin

Parameter # 1296

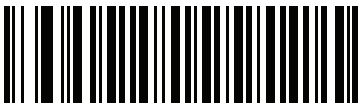
This parameter defines the polarity of the zero output pin when the **Scale Zero** button is pressed. This parameter has no effect if **Third Party Scale** (parameter # 1294) is disabled.

Options:

- Active Low
- *Active High.

Active Low
(0)

Third Party Scale Zero Pin (continued)



***Active High**
(1)

Connecting an IBM RS-485 Interface

NOTE For a list of supported scanner functionality by communication protocol *Appendix E, COMMUNICATION PROTOCOLS*.

Connect the MP6000 directly to the host interface.

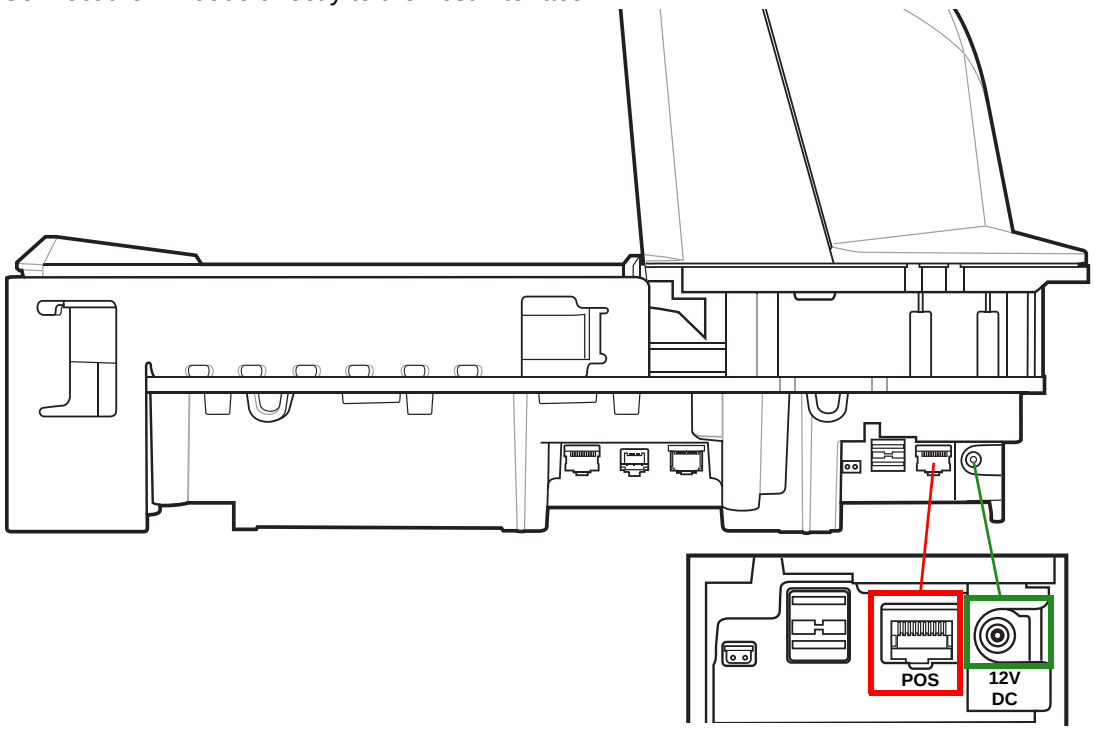


Figure 2-4 *IBM RS-485 Connections*

To set up the MP6000:

1. Attach the modular connector of the IBM RS-485 interface cable to the POS interface port on the MP6000.
2. Connect the other end of the IBM RS-485 interface cable to the appropriate port on the host (typically Port 9). The unit should power up immediately upon connection. If not, wait for unit to power up.

   NOTE Older POS systems, and/or some retailers will require use of the external power supply PWRS-14000-148R.

3. Select the port address by scanning the appropriate bar code (refer to *MP6000 Bar Code Programming Guide*, p/n 72E-172633-xx.).
4. If a scale is present in the unit, scan the appropriate scale port address (*IBM Scale Port Addresses on page 2-49*).
5. To modify any other parameter options, scan the appropriate bar codes in the *MP6000 Bar Code Programming Guide*, p/n 72E-172633-xx.

   NOTE The only required configurations are the port addresses (IBM RS-485 port address, and a scale port address if the model has a scale), and type directives (see *Step 6*). The IBM system typically controls other MP6000 parameters.

6. To prevent the IBM POS from configuring the MP6000, refer to the *MP6000 Bar Code Programming Guide* for information about RS-485 and IBM USB configuration, beep, scale, and type directives.

IBM RS-485 Host Parameters

IMPORTANT This chapter includes port address parameters only. For additional user preferences (including IBM Directives, refer to the *MP6000 Bar Code Programming Guide* (p/n 72E-172633-xx).

To select the IBM RS-485 port used, scan one of the bar codes listed in *Table 2-9*..

NOTE 1. Scanning one of these bar codes enables the RS-485 interface on the MP6000.

2. The port numbers in *Table 2-9* are no longer physical ports on the IBM POS.

NOTE This guide includes limited parameter bar codes. For ALL MP6000 programming bar codes, refer to the *MP6000 Bar Code Programming Guide (*p/n 72E-172633-xx).

Table 2-9 *IBM RS-485 Port Parameters*

Parameter	Page Number
IBM Port Addresses	
None Selected (default)	*2-45*
Hand-Held Scanner Emulation (Port 9B)	*2-46*
Non-IBM Scanner Emulation (Port 5B)	*2-47*
Table Top Scanner Emulation (Port 17)	*2-48*
IBM Scale Port Addresses	
None Selected (default)	*2-49*
Port 6A	*2-50*
Port 6B	*2-51*
Port 6E	*2-52*

IBM Port Addresses

*None Selected

IBM Port Addresses (continued)

Hand-held Scanner Emulation (Port 9B)

IBM Port Addresses (continued)

Non-IBM Scanner Emulation (Port 5B)

IBM Port Addresses (continued)

Tabletop Scanner Emulation (Port 17)

IBM Scale Port Addresses

The scale port address must be configured for the scale to operate on the IBM RS-485 bus. The default is **None Selected**.

***None Selected**

IBM Scale Port Addresses (continued)

Port 6A

IBM Scale Port Addresses (continued)

Port 6B

IBM Scale Port Addresses (continued)

Port 6E

Connector Pins

RS-232 AUX 1

Table 2-10 *RJ-45*

Pin #	Signal/Name	Direction	Description
1	N/C	N/A	No Connection
2	5V	Out	RS-232 scanner 5VDC Supply*
3	GND	N/A	Signal Ground
4	TXD	Out	Serial TXD (±5.4V)
5	RXD	In	Serial RXD (±5.4V)
6	RTS	Out	Serial RTS (±5.4V)
7	CTS	In	Serial CTS (±5.4V)
8 (GEN II only)	Scale LED	In	Indicates price computational scale has returned to zero - reflected in UI Scale Status LED (if enabled). I/O signals are 5V TTL.
9 (GEN II only)	Scale Zero	Out	Zeros price computational scale when the **Zero UI** button is pressed (if enabled). I/O signals are 5V TTL.
10 (GEN II only)	12V/150mA	Out	Power output for price computational scale.

Scale Display Port

Table 2-11 *RJ-11, Scale Display*

Pin #	Signal/Name	Direction	Description
1	DEBUG_TXD	Out	Debug serial TX
2	5V	Out	Auxiliary 5V output *
3	TXD	Out	Scale Display serial TX (3.3V TTL)
4	RXD	In	Scale Display serial RX (3.3V TTL)
5	GND	N/A	Signal ground
6	DEBUG_RXD	In	Debug serial RX

*** The total combined current for the USB and RS-232 peripheral ports should be less than 750mA total auxiliary current. Each individual port should not exceed 500mA.**

RS-232 AUX 2

Table 2-12 *RJ-45*

Pin #	Signal/Name	Direction	Description
1	N/C	N/A	No connection
2	5V	Out	RS-232 scanner 5V supply *
3	GND	N/A	Signal ground
4	TXD	Out	Serial TXD (±5.4V)
5	RXD	In	Serial RXD (±5.4V)
6	RTS	Out	Serial RTS (±5.4V)
7	CTS	In	Serial CTS (±5.4V)
8	N/C	N/A	No connection
9	N/C	N/A	No connection
10	12V/150mA	Out	Output for auxiliary device. ***NOTE*** 150mA maximum available between both AUX 1 and AUX 2.

*** The total combined current for the USB and RS-232 peripheral ports should be less than 750mA total auxiliary current. Each individual port should not exceed 500mA.**

Checkpoint Interlock

Table 2-13 *EAS Interlock Connector*

Pin #	Signal/Name	Direction	Description
1	Interlock	Out	Checkpoint EAS Interlock (5V 4mA PNP collector out)
2	GND	N/A	Signal ground

AUX A-B (Stacked USB)

Table 2-14 *Stacked USB Port*

Pin #	Signal/Name	Direction	Description
1	5V	Out	USB 5V output *
2	D-	Bidirectional	USB D-
3	D+	Bidirectional	USB D+
4	GND	N/A	Signal ground

*** The total combined current for the USB and RS-232 peripheral ports should be less than 750mA total auxiliary current. Each individual port should not exceed 500mA.**

NOTE An additional USB port is available in the front under the platter. All USB ports can be used for the USB staging flash drive. See *Table 1-3 on page 1-14* and *USB Staging Flash Drive on page 5-11* for additional information.

POS

Table 2-15 *RJ-45, Primary POS*

Pin #	Signal/Name	Direction	Description
1	DETECT	Out	USB cable detect output
2	5V	In	USB cable 5V detect input
3	GND	N/A	Signal ground
4	TXD/IBM-A	Bidirectional	Multiplexed serial TXD/IBM-A
5	RXD/D+	Bidirectional	Multiplexed serial RXD/USB D+
6	RTS/IBM-B	Bidirectional	Multiplexed serial RTS/IBM-B
7	CTS/USB D-	Bidirectional	Multiplexed serial CTS/USB D
8	DOWNLOAD	In	POS download
9	N/C	N/A	
10	12V	In	Terminal 12VDC to MP6000 (Power From Terminal) *

*** Terminal systems vary in power capabilities. Ensure your system power supply is capable of the MP6000 configuration power requirements. For terminals unable to support P.O.T., a 12V DC barrel jack is available for external power.**

12V DC

Table 2-16 *12V DC Jack, 2.5mm*

Pin #	Signal/Name	Direction	Description
1	EXT 12V	In	Center pin: 12VDC (primary power)
2	GND	N/A	Barrel: signal ground

CHAPTER 3 SITE PREPARATION AND INSTALLATION

Overview

The MP6000 was designed to drop into an existing bioptic checkstand cutout with no modifications. The unit is available in three industry standard sizes (for more detailed information, see *Appendix B, TECHNICAL SPECIFICATIONS*):

- Short - no scale available
  Length: 13.9 in. +0/-.05 in. (353.0 mm)
  Width: 11.5 in. +0/-.05 in. (292.0 mm)
- Medium - with or without scale
  Length: 15.7 in. +0/-.05 in. (399.0 mm)
  Width: 11.5 in. +0/-.05 in. (292.0 mm)
- Long - with or without scale
  Length: 20.0 in. +0/-.05 in. (508.0 mm)
  Width: 11.5 in. +0/-.05 in. (292.0 mm)

Site Preparation

IMPORTANT This guide does not encompass all factors related to worker safety and check stand design. It does offer a list of considerations which may be helpful in ensuring greater safety and productivity.

Ventilation and Spacing Requirements

The scanner/scale housing was designed to provide adequate space for ventilation and drainage for spills. *Figure 3-1* shows the drainage holes, under the platter, for possible spills that may occur when scanning/weighing items.

Checkstand ventilation may be required to ensure the MP6000 temperature limits are not exceeded. If forced air ventilation is used, it must not pass through the MP6000 as this can produce an unstable weighing environment. The ambient air temperature inside the checkstand, adjacent to the device, must not exceed 104°F (40°C).

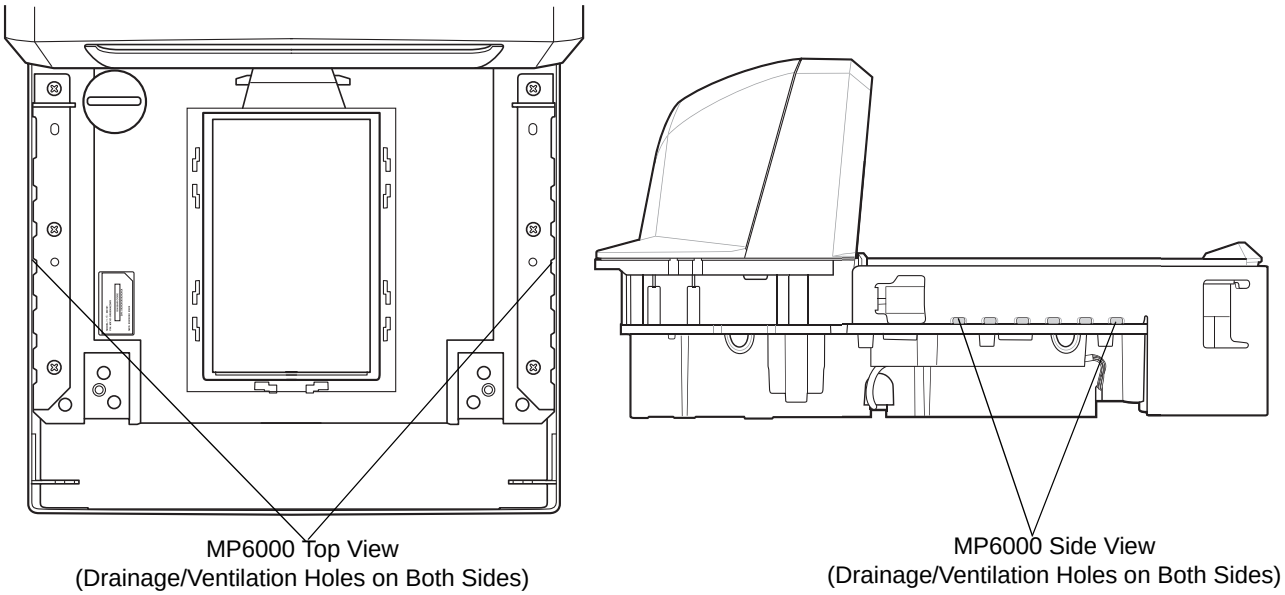


Figure 3-1 *Drainage/Ventilation Holes*

Service Access Requirements

The MP6000 was engineered to allow performance of all routine service and maintenance (including scale zeroing, and calibration) without removing the scanner from the counter.

Service must be performed by a Zebra Certified Repair Provider who has completed the Service Repair Training course, and (if applicable) the Scale Calibration Training course. For MP6200 and MP6500 scanner/scales, depending on the region of installation, a certified Weights & Measures technician is required to place the device *in trade* before using, and after certain repairs.

Electrical Power Considerations

The MP6000 may be powered from two different sources:

- POS Equipment
  - IBM register with powered Port 9B interface (using p/n CBA-M51-S16PAR accessory cable)
  - NCR POS with powered RS-232 interface (using p/n CBA-R55-S16PAR accessory cable)
  - Any register with powered USB interface - 12V only (using p/n CBA-U52-S16PAR accessory cable)
- AC/DC power cube (using p/n PWRS-140000-148R) with IEC style modular line cord.

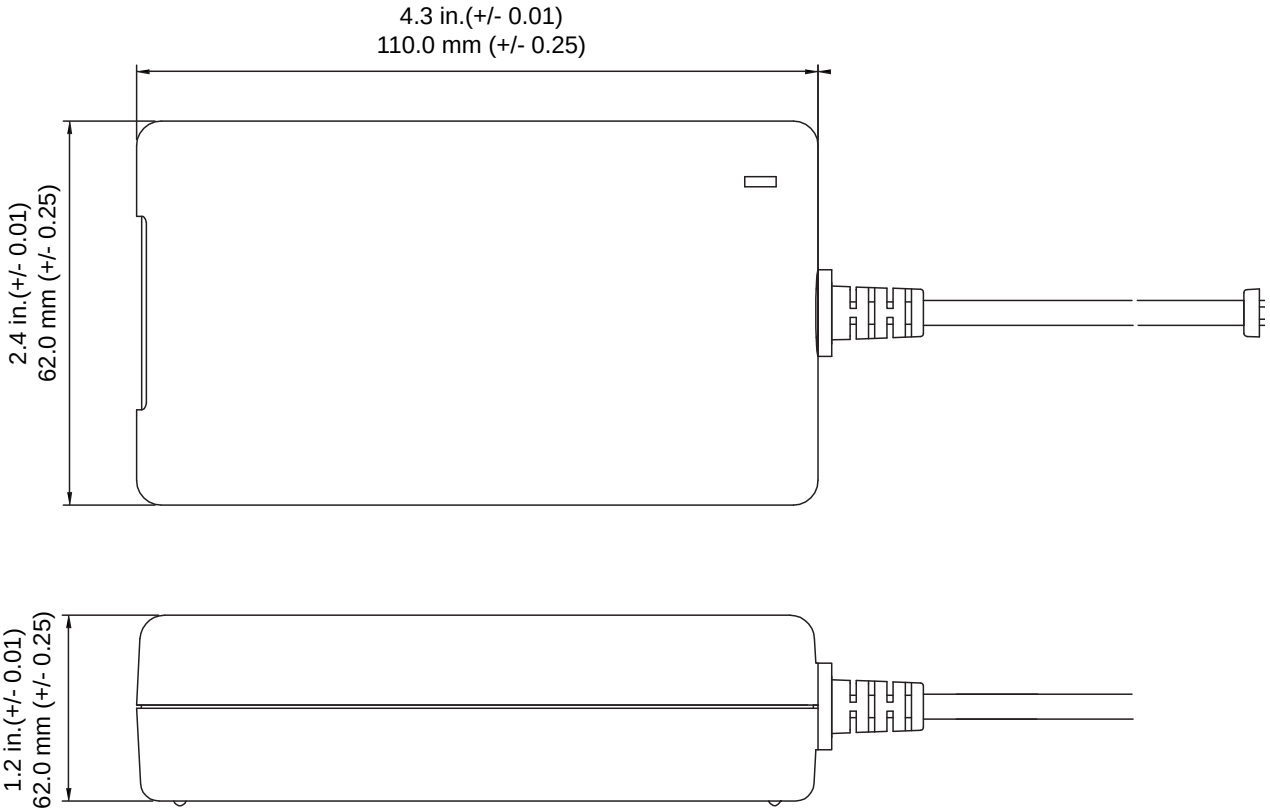


Figure 3-2 *Power Supply*

If using the AC/DC accessory power supply, a 115V/230V outlet must be available in the checkstand near the scanner.

Grounding

All POS equipment should be properly grounded, and only a three prong IEC style line cord should be used with the AC/DC accessory power supply.

If you are unsure how to verify proper ground of equipment in the checkstand ask a qualified electrician to review the equipment installation.

NOTE In an effort to eliminate a possible safety hazard all metal parts of a metal checkstand must be electrically grounded.

Checkstand Preparation

If the MP6000 is not replacing an old bioptic device, and you are installing for the first time into a new checkstand, verify that the area allows for proper cabling, and an AC/DC power supply. Mounting may require installation of support(s), leveling screws, and peripheral devices. See *Counter Cutout on page 3-5* for more details about the location and preparation of the opening.

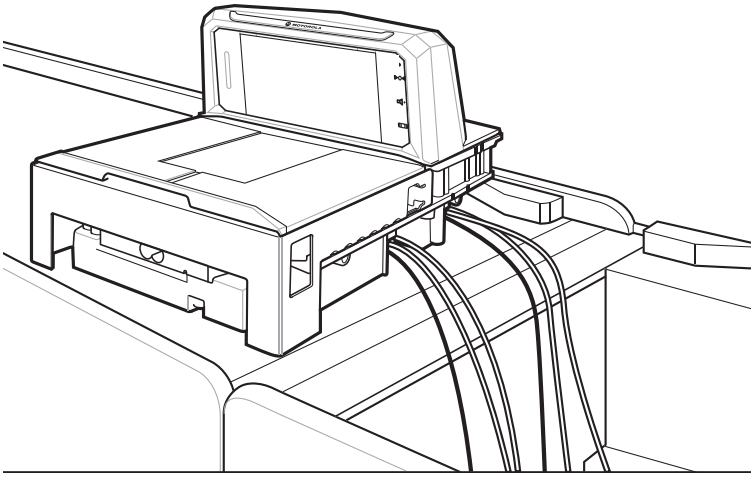


Figure 3-3 *Preparing the Checkstand*

IMPORTANT The long (20.0 in./50.2 cm) versions are not available with leveling screws. The checkstand should provide for two leveling screws under the front and rear of the MP6000. The medium (15.7 in./39.9 cm) and short (13.9 in./35.3 cm) MP6000 models have available accessory kits for standard and long leveling screws.

Liquid Spills and Moisture

Select a checkstand design which allows fluids to flow through, and directs liquids and moisture build up away from any electronic equipment or storage areas. Should a liquid spill occur, ensure that moisture can flow through the checkstand without pooling. The power supply should be away from any area where spills may occur.

Vertical Clearance

For all configurations of the MP6000, the maximum height above the platter is 5.1 in.; the maximum depth below the platter is 4.08 in.

Tools

No tools are required to install a MP6000 without a scale, or a Checkpoint antenna. The following tools are required to mount the Scale Display:

- Ruler (or similar measuring device)
- Pencil (or similar measuring device)
- Drill
- 2.4 mm (3/32 in.) diameter drill bit (to make screw holes where display is to be mounted)
- 19 mm (3/4 in.) diameter drill bit (to make cable pass through hole where display is to be mounted)
- #2 Phillips screwdriver.

If the optional leveling screws are used on a small or medium MP6000, a Phillips or flat blade screwdriver is needed.

Counter Cutout

There are three different MP6000 models: long, medium, and short. Prior to cutting the counter opening, ensure you have the dimensions for the scanner/scale being installed (see *Figure 3-30*, *Figure 3-34*, and *Figure 3-38*). The counter cutout size should reflect the model (also see *page 3-31* for installation information).

Ergonomics

Ensure the installation is designed for maximum comfort, efficiency, safety, and ease of use. Allow items to be directed within easy reach, and a scanning area requiring no lifting or special orientation of items.

Installing Components

The MP6000 can be installed with or without the following options:

- Scale and Scale Display (depending on Weights and Measure regulatory jurisdictions, a Scale Display may be required for units with a scale)
- Checkpoint EAS antenna
- Sensormatic EAS coil antennae and RS-232 cabling
- CSS
- AUX hand-held scanners.

Quick Reference Installation Steps

1. Remove the existing bioptic scanner, and accessories (*page 3-7*).
2. Unpack the MP6000, and accessories (*page 3-7*).
3. Assemble the dual head Scale Display, if applicable (*page 3-9*).

   NOTE This only applies when adding a second display head to a single Scale Display.

4. Install the Scale Display, if applicable (*page 3-12*).
5. Connect the cables (*page 3-15*).
6. Install CSS, if applicable (*page 3-16*).
7. Install the MP6000/scale in the checkstand (*page 3-25*).
8. Power up the MP6000 (*page 3-34*).
9. Lower and level the MP6000 in the checkstand (*page 3-31*).
10. Calibrate the scale, if applicable (see *Chapter 4, SCALE CALIBRATION (MODELS WITH A SCALE ONLY)*.
11. Install Sensormatic coil, if applicable (*page 3-34*).
12. Install Checkpoint antenna, if applicable (*page 3-37*).
13. Install the MP6000 trim kit, if applicable (*page 3-38*).

Remove Existing Bioptic Scanner and Accessories

If you are replacing existing equipment, follow these step to remove the old unit:

1. Ensure the POS is logged off, and the drawer was cleared by the store personnel. This varies by location. Some IT Departments may require the POS to be completely shut down.
2. Unplug the current bioptic scanner from its power supply.
3. Prior to removing cables, make a note of the current cable runs.
4. Remove all cables connected to the bioptic scanner. Do not cut cables if you are using, or selling the old equipment.
5. If applicable, unplug the current hand-held device from its power supply, and disconnect it from the current bioptic scanner/host.
   a. If reusing the hand-held device, leave its cable runs intact.
   b. If the hand-held device was attached to the bioptic scanner with an RS-232 cable, a new cable and a new hand-held device configuration is required.
6. If a Sensormatic connection is present, there are two cables to be aware of:
   a. The large cable to the coils/antennas - disconnect from the current bioptic but leave in place.
   b. The RS-232 cable to the Sensormatic controller communications port - use its run to assist replacing it.
7. If a Scale Display is present:
   a. Make a note of how the current display was mounted and determine if the current placement can accommodate the new Scale Display. Adjustments to the layout, and cable run may be required.
   b. Unplug the old Scale Display power.
   c. Remove it from the checkstand.
   d. Remove its cables.
   e. Remove the Scale Display.
8. Remove the existing bioptic scanner.

Unpacking MP6000 Equipment

To unpack equipment:

1. Remove all components from their packaging, and check that all parts are present. Each box includes the material listed in *Table 3-1*. Each of the items listed is contained in separate packaging within the box and is recognizable as a discrete item. Power cables, host to scanner communications cables, leveling screws, and trim filler kit are all sold separately in kits.

Table 3-1 *MP6000 Box Contents*

Description	Part Number
MP6000 w/o Platter	MP6xx0-xx000M010xx
Platter	22-159817-xxx
Checkpoint Antenna	10-162248-xx
Regulatory Guide	72-171321-xx

NOTE An optional Scale Display, p/n MX201-SR00004ZZWR, is available separately for scale models only.

2. For added protection during shipment, the MP6000 platter is covered with a tight fitting layer of plastic as shown in *Figure 3-4*. This plastic layer must be removed before placing the unit into service. (In the case of a scale model, just before scale calibration; and, in case of a non-scale model, as the final step of installation)

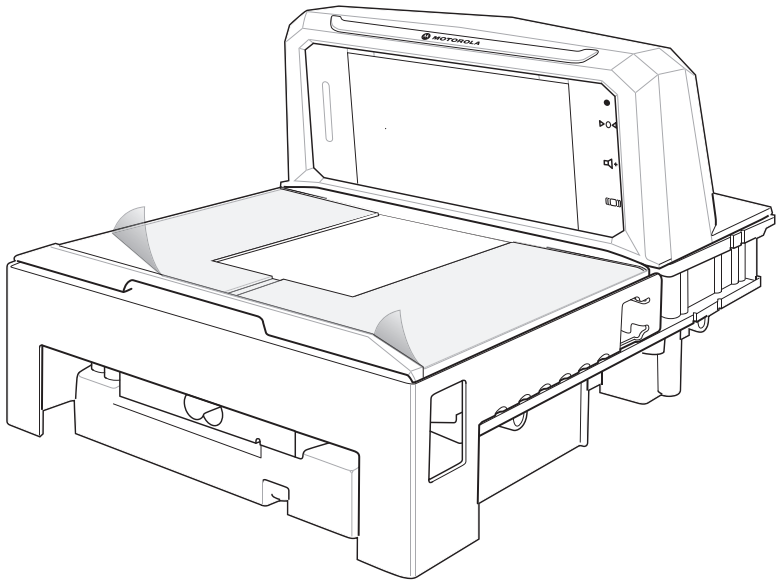


Figure 3-4 *Platter Protector*

CAUTION Do not use a sharp object to remove the protector. Doing so can damage the platter.

3. Keep the packing (it is the approved shipping container, and should be used if the MP6000 needs to be returned for servicing), or dispose of the packing in an environmentally sensitive manner.

Pre-Installation Notes

- If a Scale Display is included, it is recommended to mount it in an appropriate location, preferably where the old display was mounted. The cable should be routed through the checkstand.
- If the unit includes a scale, scale calibration is required.
- If the unit includes EAS Sensormatic:
  - its coils require installation
  - the large Sensormatic cable should be threaded from the controller box to the coils
  - The Sensormatic RS-232 cable should be connected to the unit.
- If EAS Checkpoint is required, unravel the Checkpoint antenna and ensure a Checkpoint representative connects the device to the controller.
- If EAS Checkpoint with interlock is used, connect the interlock cable to the MP6000.
- All accessories (hand-held scanner, CSS, etc.) require connections.

Assemble the Dual Head Scale Display

NOTE This only applies when adding a second display head to a single display.

Required Tools

- Phillips head screw driver.

To convert a single display to a double display:

1. The second Scale Display head ships with a cable (already fitted), pole grip, two M3 x 12 self tapping Phillips screws, and a set of four display overlays.

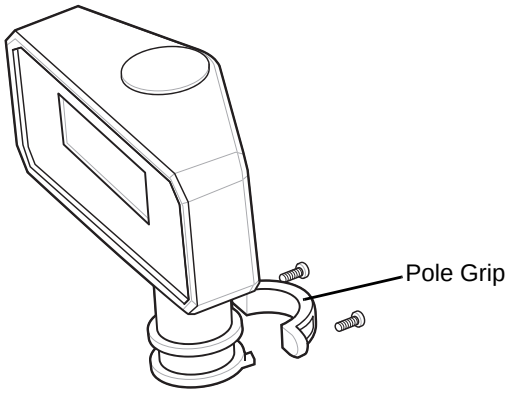


Figure 3-5 *Second Scale Display*

2. Remove the adhesive backing of the required overlay, and carefully secure it in place on the front face of the new display.

NOTE The new overlay must contain exactly the same information as the existing display.

3. Remove the four securing screws from the rear of the existing display before removing the front of the existing display, complete with LCD and PCB.

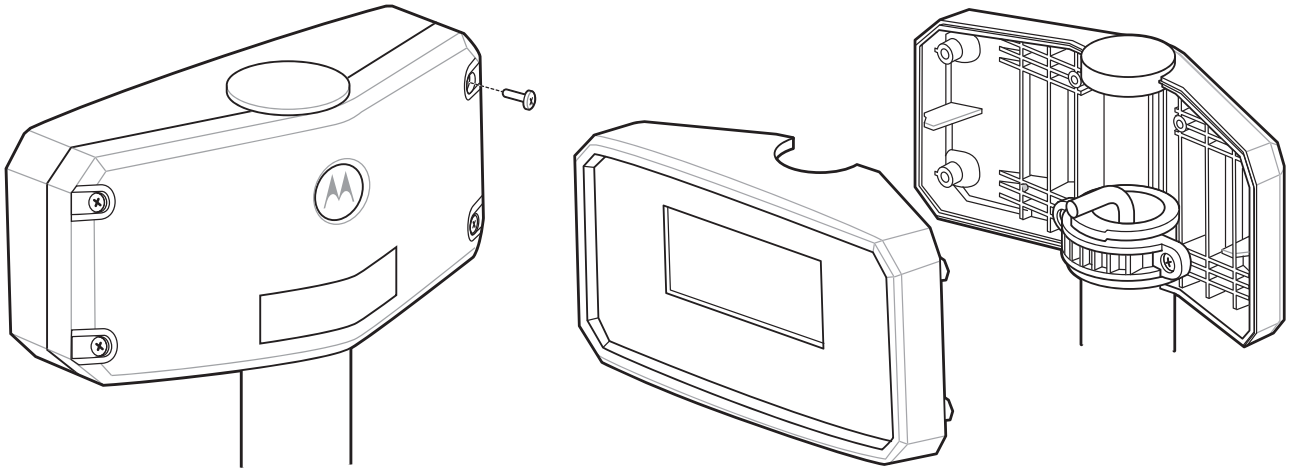


Figure 3-6 *Dismantling Existing Display*

4. Remove the circular cap from the existing display and either discard, or keep it as a spare part.

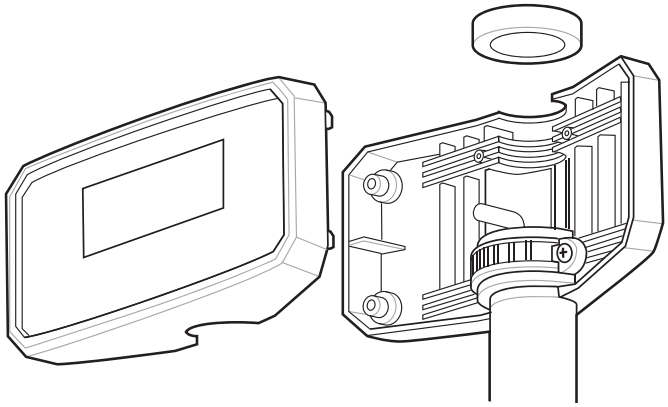


Figure 3-7 *Removing Circular Cap*

5. Connect the cable from the new display to the RJ-11 port marked “To Slave” on the PCB in the existing (single head) display.

6. Place the short pole extension of the new display into the vacant slot in the rear cover of the existing display.

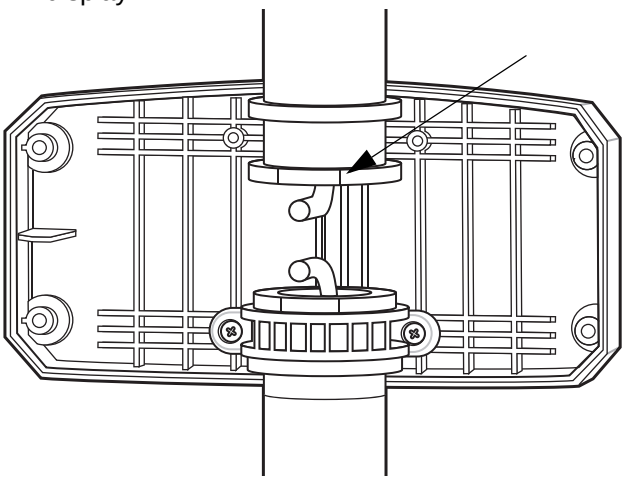


Figure 3-8 *Short Pole Extension*

NOTE There is a rotation limiting tab on the top and bottom surfaces of the pole extension (see *Figure 3-9*). These need to be fitted one side or the other of the mating projection in the rear cover. If not, there may be difficulty replacing the existing front cover.

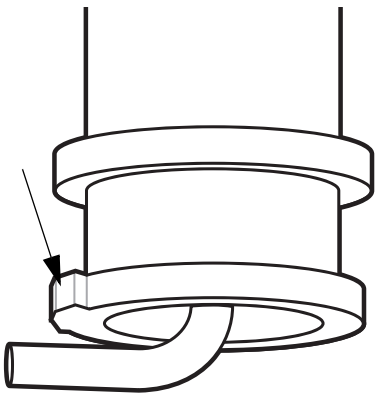


Figure 3-9 *Rotation Limiting Tab*

7. Secure in place using the pole grip and two M3 x 12 self tapping screws supplied. These are Phillips screw heads.

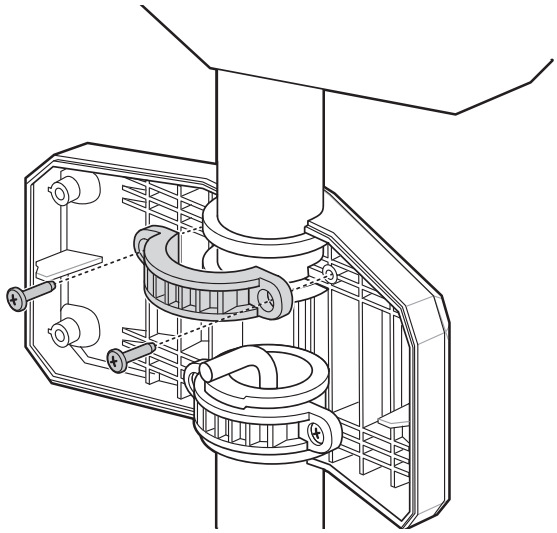


Figure 3-10 *Secure in Place*

8. Replace the case back of the existing (original single-head) display using the four M3 x 18 self tapping screws (removed earlier).

Install the Scale Display

When installing the optional Scale Display, consider both the cashier and customer's viewing angle. Both must see the weight value displayed.

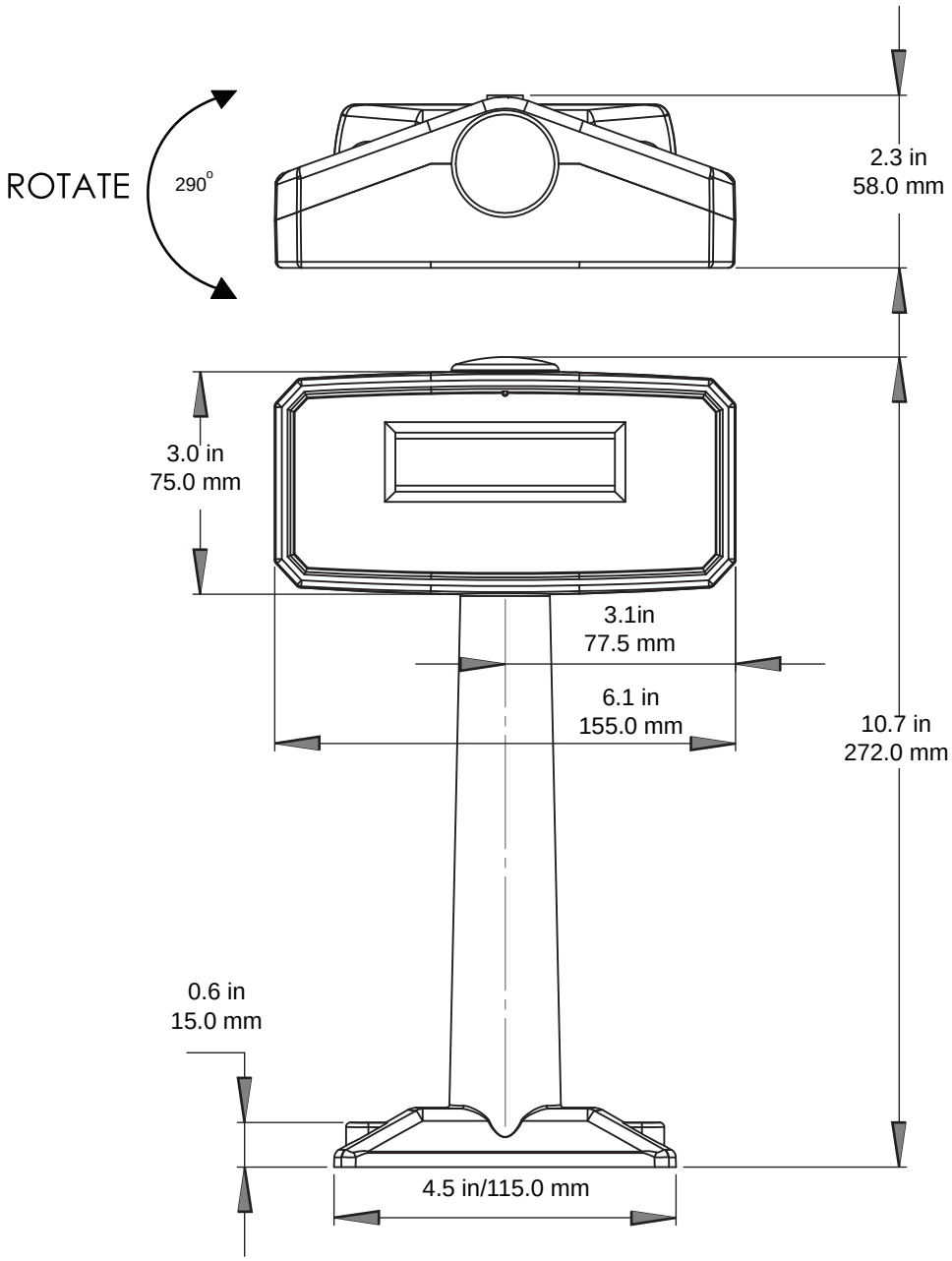


Figure 3-11 *Single Scale Display - Dimensions; Display Rotates Independently (Approximately 290°)*

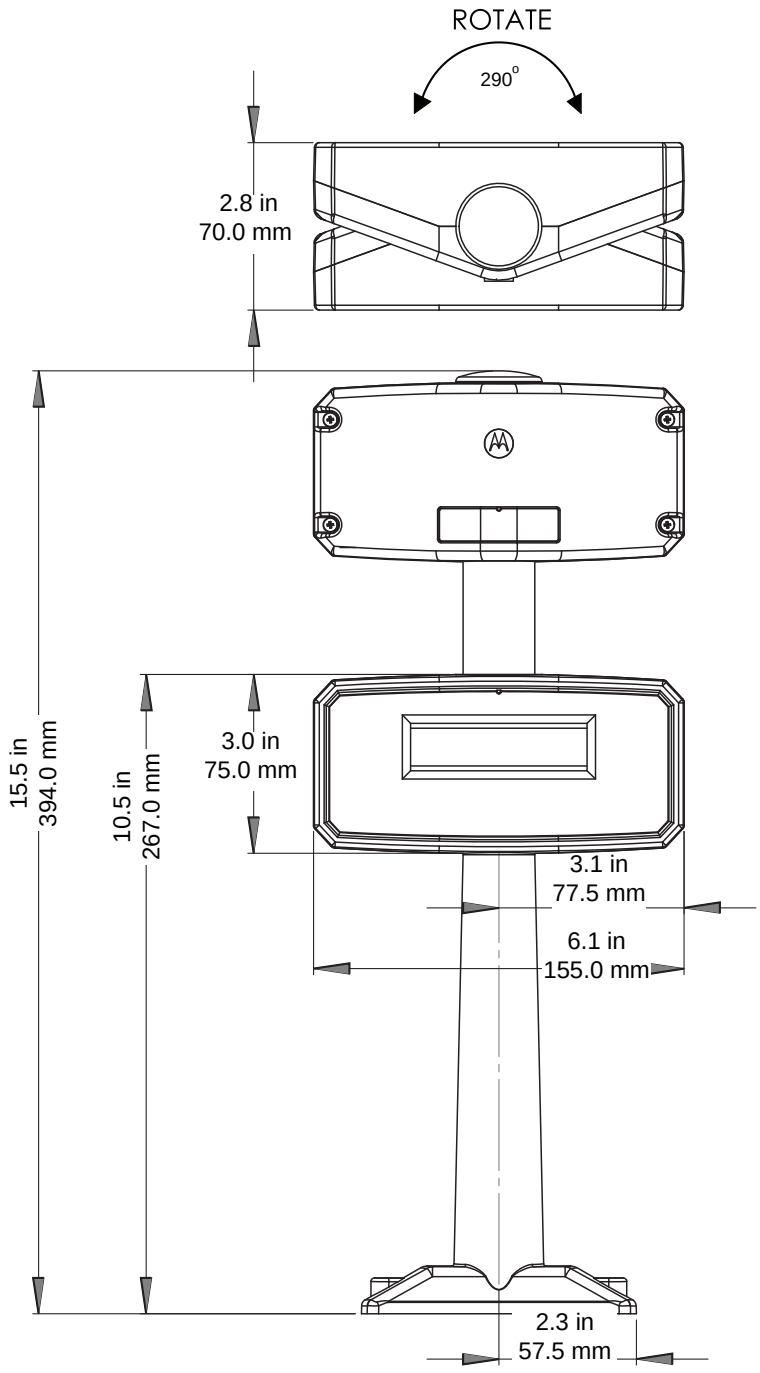


Figure 3-12 *Dual Scale Display - Dimensions; Display Rotates Independently (Approximately 290 °)*

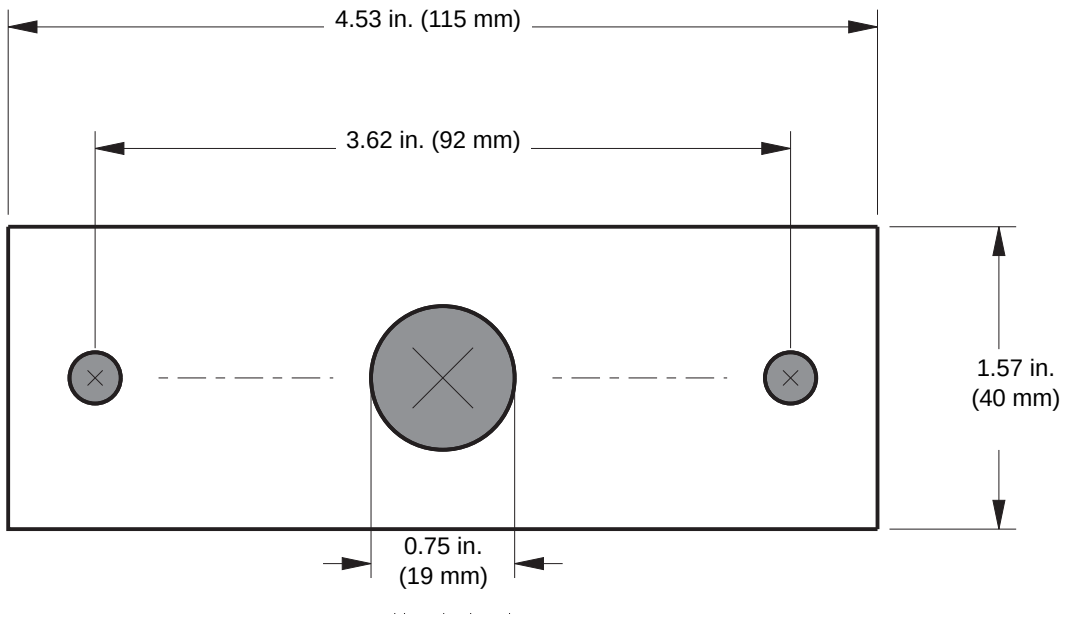


Figure 3-13 *Scale Display - Base Install Template*

> ***NOTE*** When printing this template ensure the *Page Scaling* option is set to *None*, or a setting that allows printing the actual size.

Getting Started

For an existing Scale Display from an old scanner:

- Unscrew the unit, disconnect its cable from scanner, then remove the unit and cables.
- In same location, (or in a new location as specified by the retailer and/or local weights and measures law) replace with the Zebra Scale Display.

For a new installation:

- Identify the location to install the Scale Display. Identify the location to place the Scale Display based on counter design and viewing angle. Place the unit where it cannot impede access to scanned items being swept over the MP6000, payment terminals, printer validation and paper roll slots, access to replace consumables (rolls) etc.

  > ***NOTE*** BOTH cashier and customer need to see the weight value displayed.

- Drill the required holes where the display is to be mounted (see the template, *Figure 3-13*).

  a. The 19 mm (3/4 in.) diameter hole is optional, to be used as a through hole for the cable pass-through.

  > ***NOTE*** The cable can also be routed on top of the counter via the notch in the base of the display. See the template for hole spacing.

  b. The other two holes are pilot holes for the mounting screws and should be made to a diameter of 2.4 mm (3/32 in.) and a depth of 25 mm (.98 in.). See the template for hole spacing.

Installing

1. Unpack the new Scale Display from its packaging.
2. Place the proper Scale Display faceplate on the display.
   a. Fit the correct label on the Scale Display window. Select an overlay to ensure the proper weight units (kg or lb) that are required and parameters EXACTLY match the scale parameters printed on the scale Weights and Measures label. Depending on the unit, and the country location, labels vary. You MUST match the label to the type of MP6000 scale you are installing. (Labels, and instructions for their use, are packaged with the Scale Display.)
      - kg single interval
      - lb single interval
      - kg dual interval
      - lb dual interval
      - other models as released over time, e.g. Portuguese for Brazil, etc.
   b. Remove adhesive backing and carefully secure on the front face of the display.
3. Route the cable through the 19 mm hole in the countertop, or route the cable out through the notch in the base of the display.

   NOTE The notch is usually located towards the rear, where it is less visible.

4. Fasten the Scale Display to the countertop.
   a. Place and align the display over the countertop screw holes.
   b. Place two screws through each screw hole in the base of the display.
   c. Drive both screws into the counter until tight.
   d. Route the cable accordingly and connect the Scale Display cable to port 0.0 Scale Display on the MP6000 BEFORE powering up the scanner/scale (see *Figure 1-3 on page 1-10*).
5. Power on the MP6000. On power up, the Scale Display presents the following test sequence:
   a. Displays 00.000 for 1.5 seconds; then displays 99.999 for 1.5 seconds.
   b. Displays *xx.xx0 lb* or *xx.xxx kg* (based on the units selected) in normal operating mode.

Cables and Connections

When routing the power and interface cables for the MP6000:

- Do not route interface cables in close proximity to electrical motors or other sources of electromagnetic interference.
- Cables can drop directly from their connectors on the scanner, or, alternatively, can be routed along the scanner's side to the back.
- Connect the power cable to the MP6000 before plugging the AC power cord into the AC outlet.

Install the Customer Side Scanner (MX101)

The MX101 is an optional modular unit that fits into a modified MP6000 tower and is used for customer scanning. The unit can be installed on either the left or right side of the MP6000.

Remove all hardware from the packaging. The packaging contains the MX101 scan module and window; MP6000 modified rear tower; USB cable; and MX101 identification label (Regulatory Guide; instructions to affix the label on the MP6000; and installation instructions not shown).

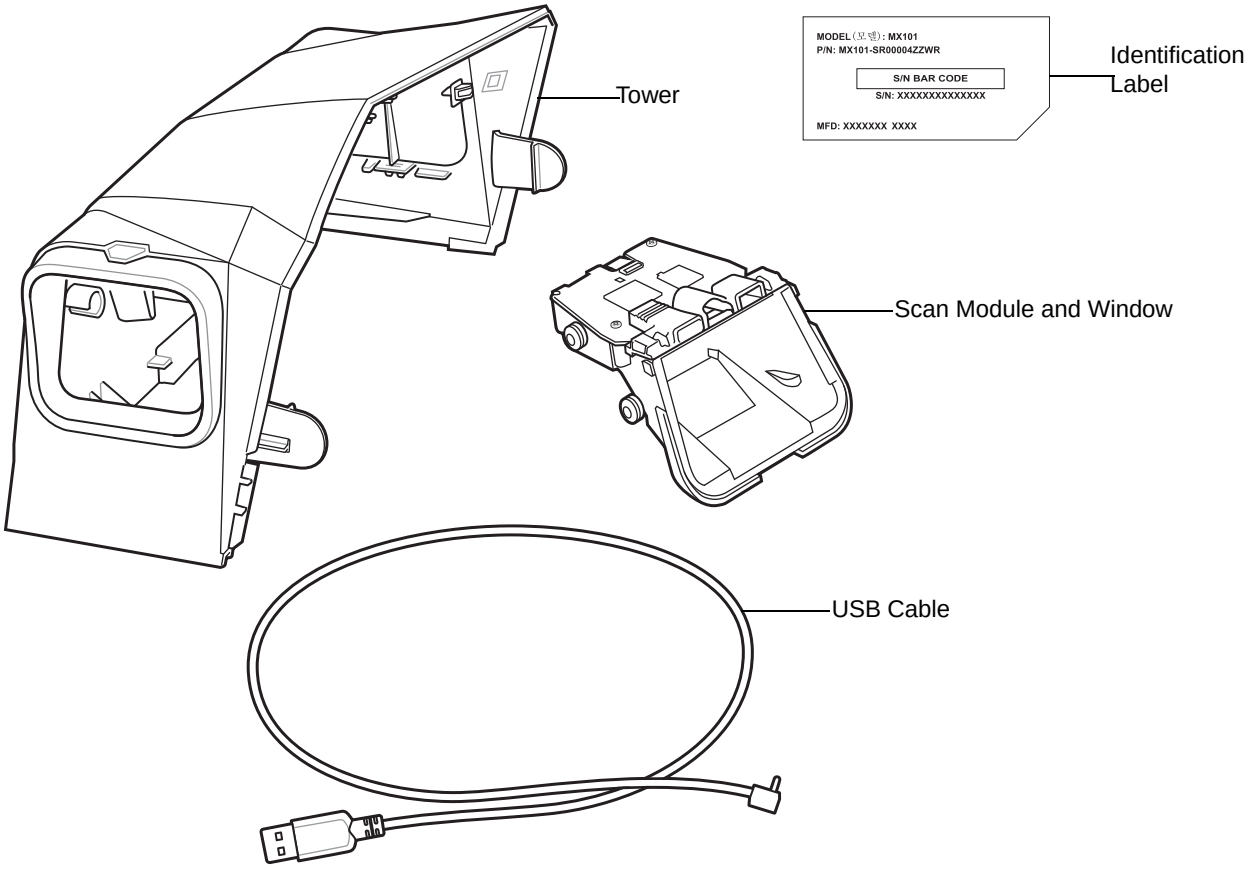


Figure 3-14 *Parts of the MX101*

Installing the MX101 on the Customer's Right Side (Default) of the Tower Cover

To install the MX101 on the customer's right side (default) of the MP6000:

1. Remove the MP6000 tower bezel by squeezing inward on both the left and right sides of the lower part of the tower bezel, pushing its side snaps to disengage. Slide the tower bezel up and lift out.

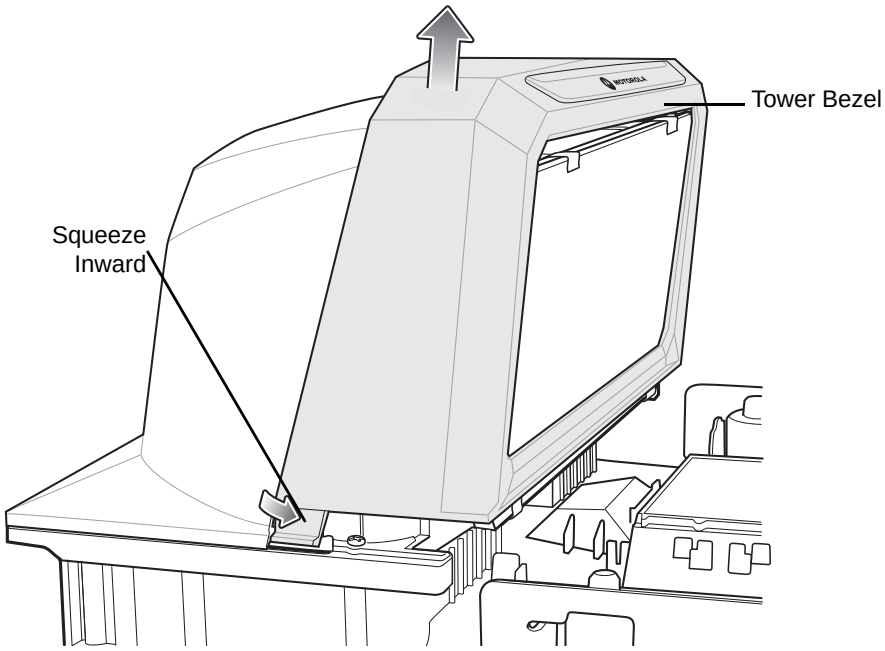


Figure 3-15 *Removing the MP6000 Tower Bezel*

2. Remove the MP6000 rear tower cover by gently pulling outwards on the tabs on either side; then slide the tower cover back to remove.

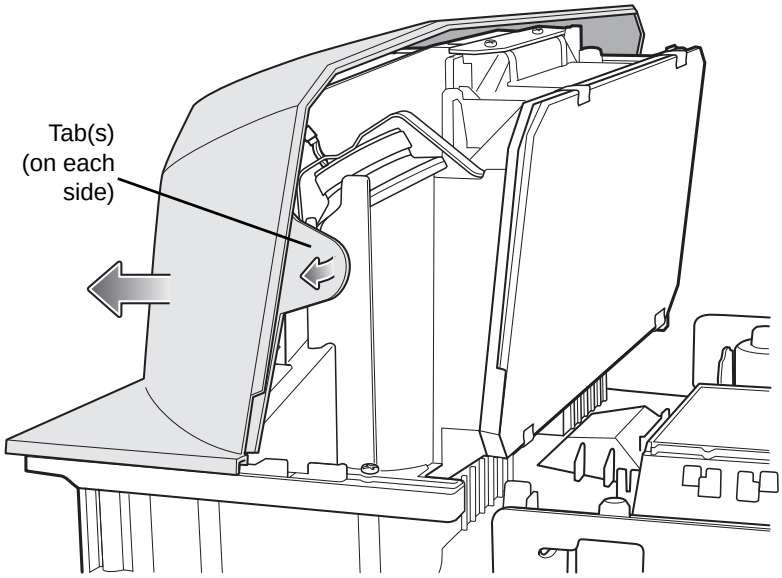


Figure 3-16 *Removing the MP6000 Tower Cover*

3. After removing the tower cover, ensure the speaker wire ferrite is in the correct position, behind the tabs as shown in *Figure 3-17*. Failure to properly route the wire may cause the wire to pinch when the tower cover is replaced.

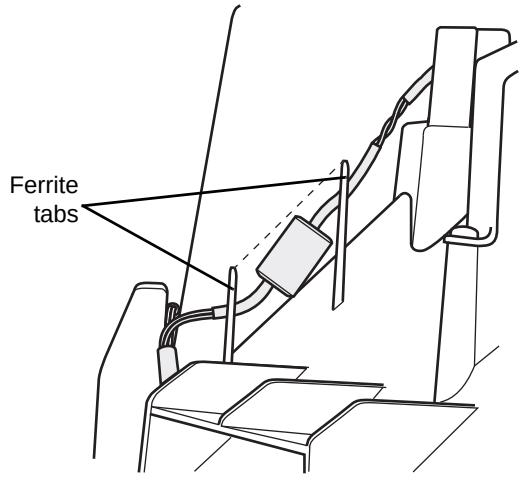


Figure 3-17 *Speaker Wire Ferrite Placement*

4. Determine the side of the MP6000 to which the MX101 should be installed. The default is the customer's right side (the side of the MX101 tower cover already open for the scan module to be inserted).

NOTE See *Installing the MX101 on the Customer's Left Side of the Tower Cover on page 3-22* to install the scan module on the customer's left side of the tower cover.

5. Remove the scan window cover from the CSS tower by squeezing the snaps shown below. The snaps are squeezed from inside the tower cover.

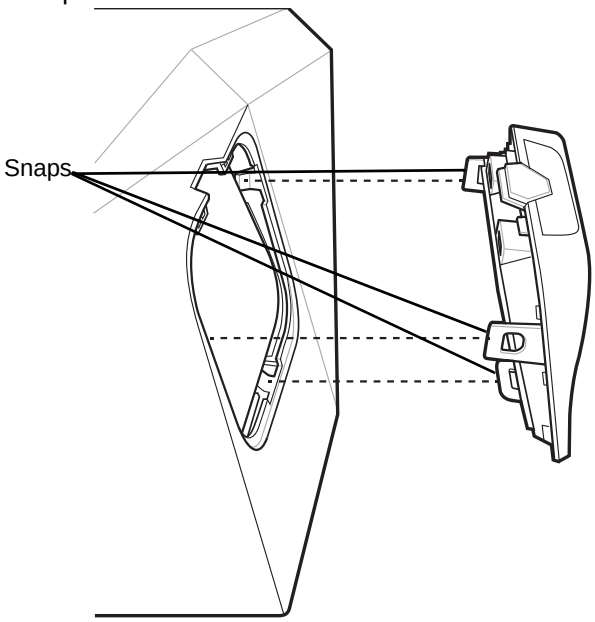


Figure 3-18 *Removing the Scan Window Cover*

6. Insert the scan module into place facing out of the opening of the CSS tower cover. Ensure the grommets on the scan module align with the sockets in the tower cover, and push into place.

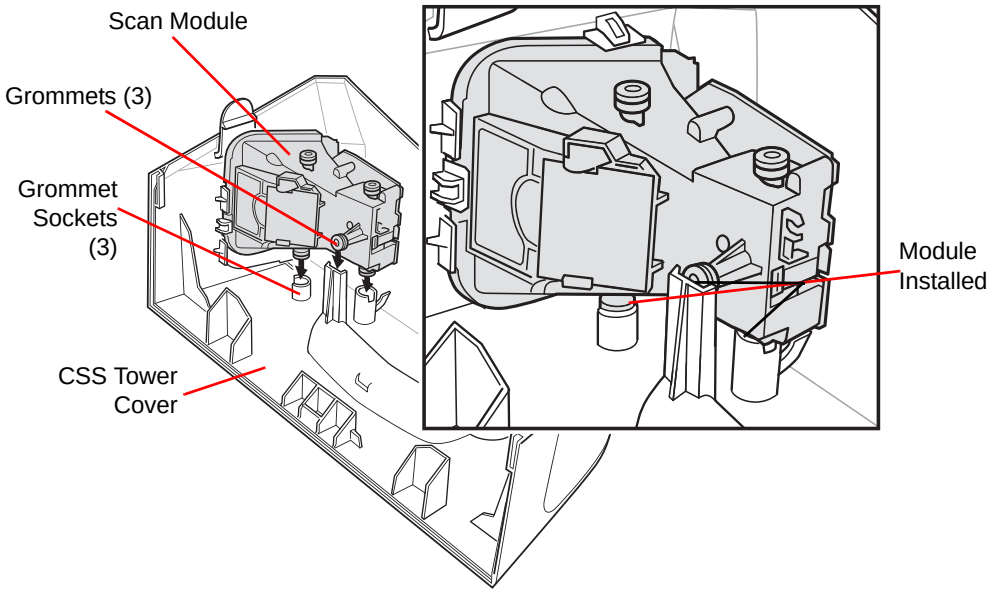


Figure 3-19 *Inserting the Scan Module*

7. Snap the scan window cover into place on the tower, over the CSS scan window.

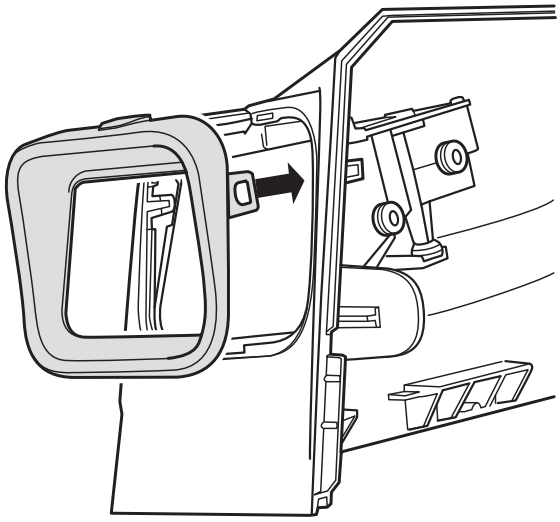


Figure 3-20 *Snapping the Scan Window Cover in Place*

NOTE Ensure you hear and feel three distinct snaps: one for each snap mechanism (lower, front, rear), to ensure a snug fit in the rear tower.

8. Connect the USB cable to the top USB auxiliary port (recommended) on the MP6000. Route the cable into the side cable slots as shown.

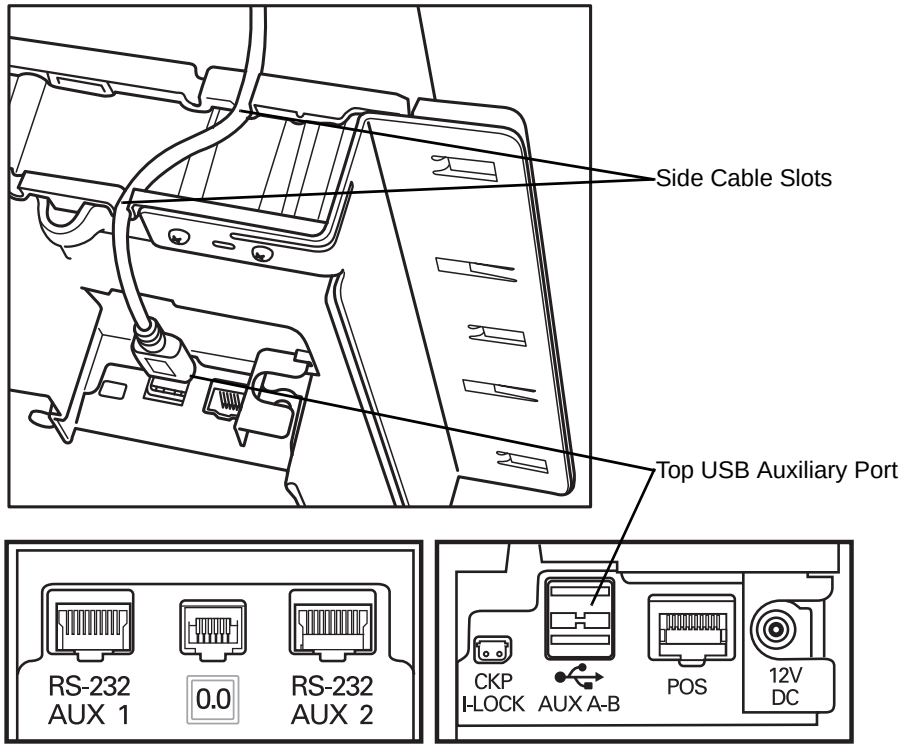


Figure 3-21 *Connecting the USB Cable*

9. Route the cable, looping through the right side cable slots as shown in *Figure 3-22*. (Cable wire should be tight.)

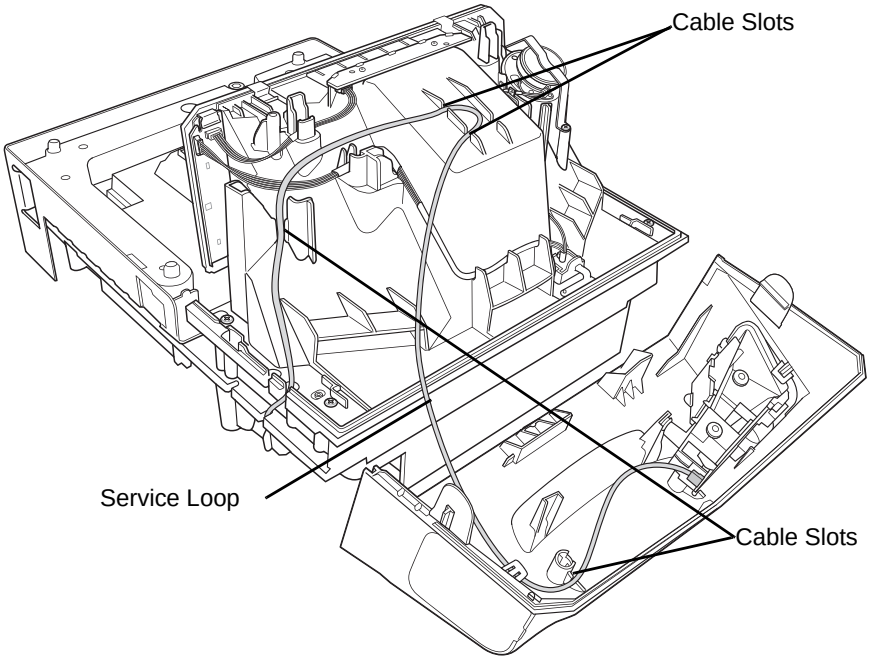


Figure 3-22 *Routing the Cable*

NOTE The path through the cable slots is not intuitive. Send the cable towards the left of the tower (as shown) even though the CSS module is on the right. (Take up all the slack outside the MP6000 chassis so the CSS cable cannot be pinched by the checkstand.)

10. Connect the cable to the micro USB port at the bottom of the CSS scan module. Ensure the cable is clipped into the scan module plastic cable clip directly below the USB port.

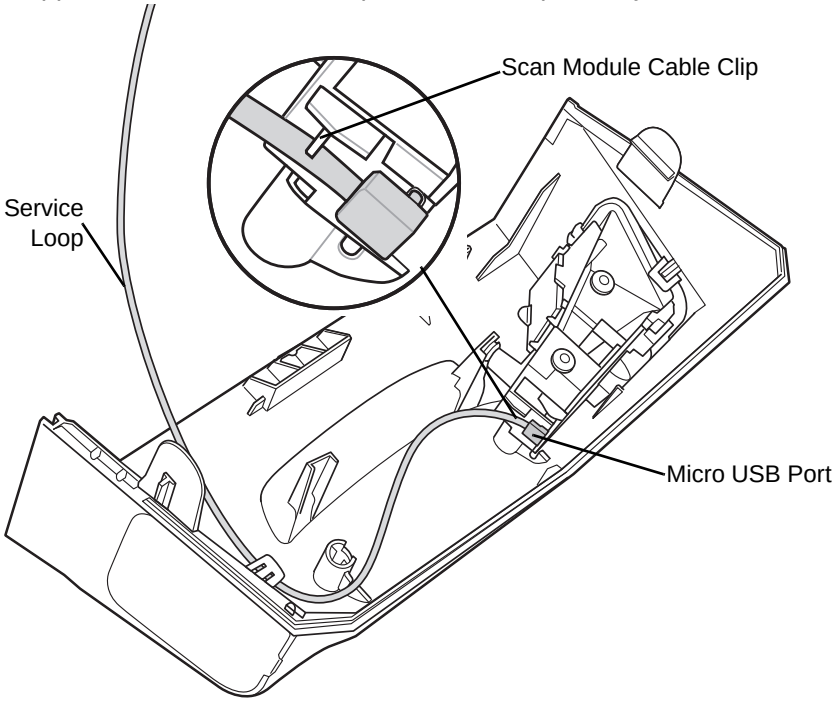


Figure 3-23 *Connecting the Cable*

11. Slide the CSS tower cover back into place. Ensure the cable service loop folds up into the blank space in the CSS tower cover, on the opposite side from the scan module. Snaps should click together. When the tower cover is replaced, the module locks into the grommet compression ribs on the MP6000 inner tower.

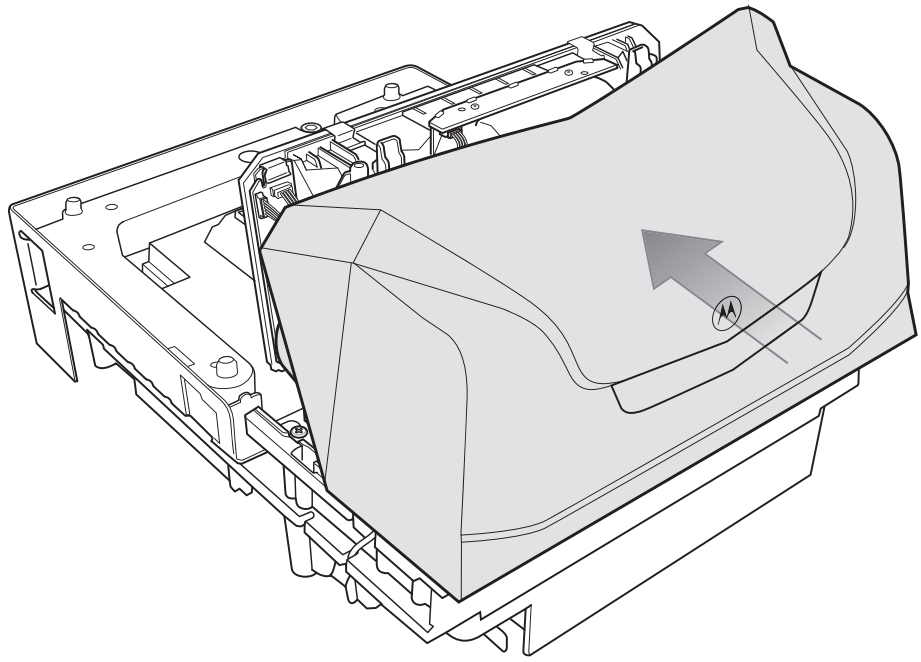


Figure 3-24 *Replacing the Tower Cover*

12. Replace MP6000 tower bezel. Snap down into place.

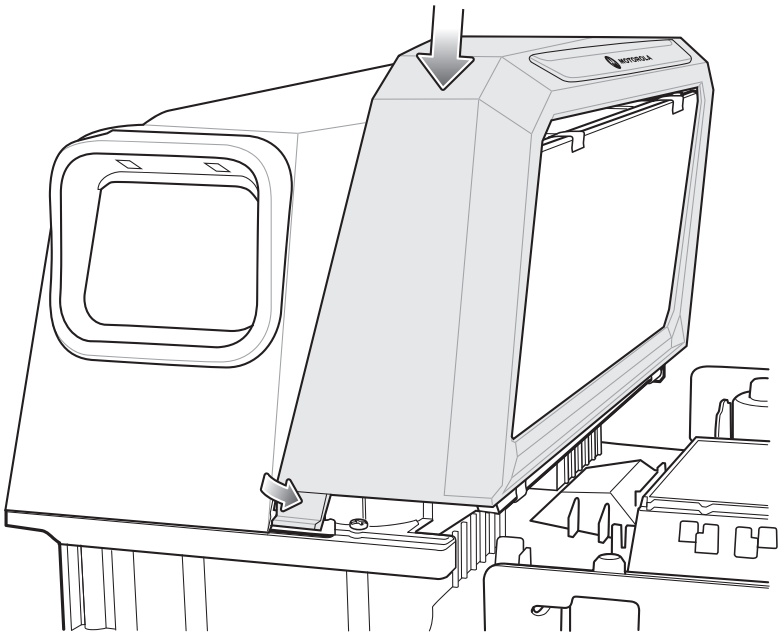


Figure 3-25 *Replacing the MP6000 Tower Bezel*

Installing the MX101 on the Customer's Left Side of the Tower Cover

To install the MX101 on the left side of the MP6000:

1. Push out the CSS blank side cover on the left side of the CSS tower cover, and replace the cover into the opening on the right side of the tower cover.

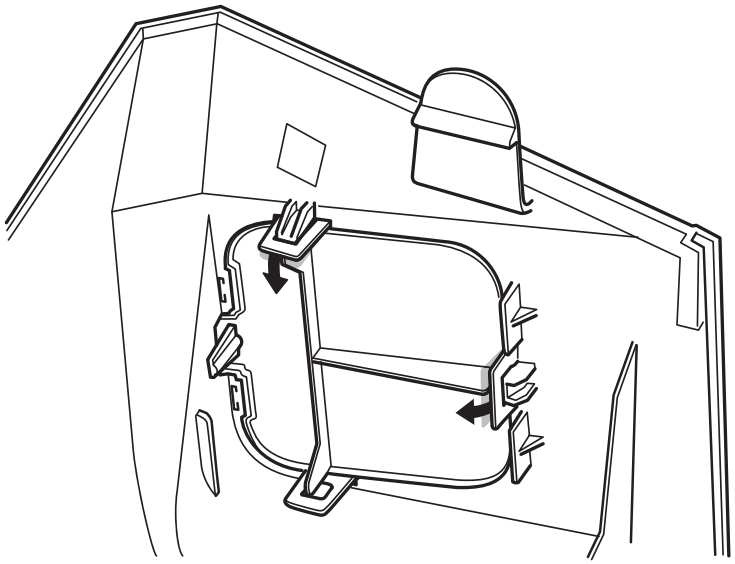


Figure 3-26 *Removing the Side Cover*

2. Repeat steps *1*, *2*, and *4* from *Installing the MX101 on the Customer's Right Side (Default) of the Tower Cover on page 3-17*.
3. Insert the scan module into place facing out of the left side opening of the CSS tower cover. Ensure the grommets on the scan module align with the sockets in the tower cover, and push into place.
4. Snap the scan window cover into place on the tower, over the scan window. (See *page 3-19* for diagrams.)
5. Connect the USB cable to the top USB port (recommended) on the MP6000 and route the cable through the side cable slots shown in step *8* on *page 3-20*.

6. Route the cable, looping through the left side cable slots as shown below.

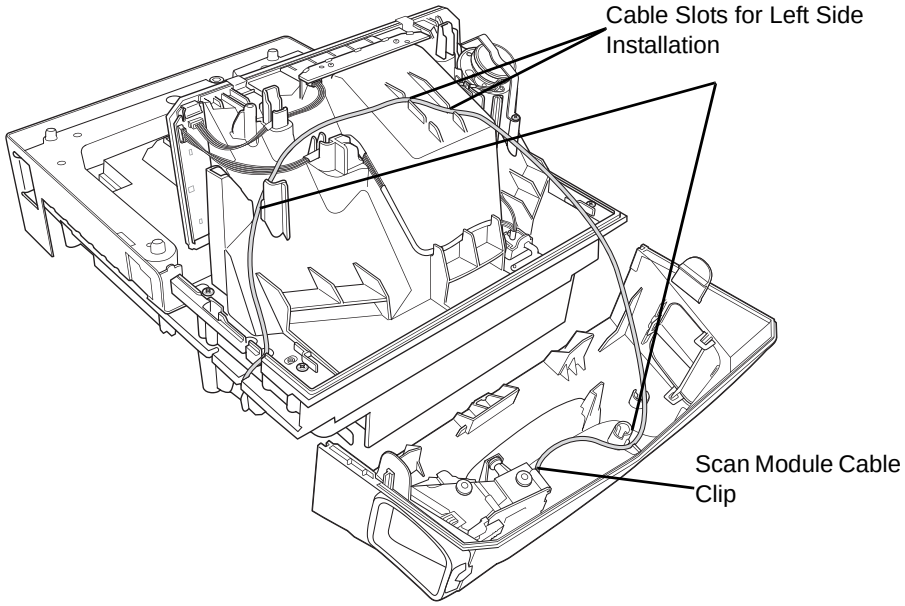


Figure 3-27 *Routing the Cable*

NOTE The path through the cable slots is not intuitive. Send the cable towards the right of the tower (as shown) even though the CSS module is on the left. (Take up all the slack outside the MP6000 chassis so the CSS cable cannot be pinched by the checkstand.)

7. Connect the cable to the micro USB port on the bottom of the scan module. Ensure the cable is clipped into the scan module plastic directly below the USB port. (See step *10* on *page 3-21* for illustration.)
8. Slide the CSS tower cover back into place. Ensure the cable service loop folds up into the blank space in the CSS tower cover, on the opposite side of the scan module. Snaps should click together. When the tower cover is replaced, the module locks into the grommet compression ribs on the MP6000.
9. Replace MP6000 tower bezel. Snap down into place.

Affixing the Identification Label

IMPORTANT Before you install the MX101, affix the identification label under the MP6000 platter, as shown in *Figure 3-29*. Failure to affix the identification label to the MP6000 voids the MX101 warranty.

Peel the label from its backing.

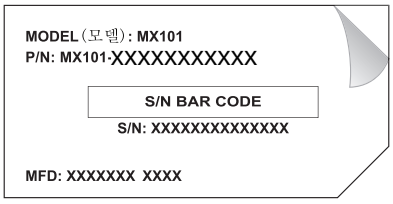


Figure 3-28 *Peel Off Backing*

Affix the label to the indentation under the MP6000 platter.

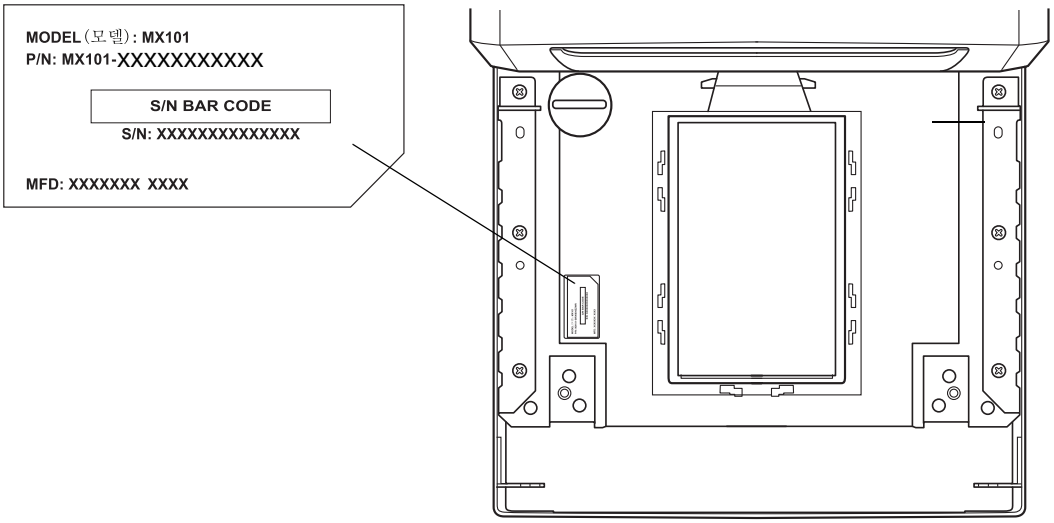


Figure 3-29 *Affix Label*

Install the MP6000 /Scale

Ensure all components of the MP6000/scale (if applicable) and cables are ready to install (see *Unpacking MP6000 Equipment on page 3-7*).

Checkstand Counter Cutouts and MP6000 Dimensions

There are three different sets of dimensions for counter cutouts, based on the MP6000 model being installed. After cutting the edges should be clean and straight, with all burrs and splinters removed.

The MP6000 is 11.5 in. wide. If replacing a pre-existing scanner in a checkstand that is 12 in. wide, we recommend a Trim Filler Kit to fill-in the gap in the checkstand (see *Trim Kit Installation (If Required) on page 3-38*).

The MP6000 is 4 in. deep. If replacing a pre-existing 5 in. deep short or medium scanner, you must use the 1 in. longer leveling screw kit (p/n MX302-SR00004ZZWR). This will bring the platter up to the countertop level.

Cutout/Dimensions - MP6000 Short

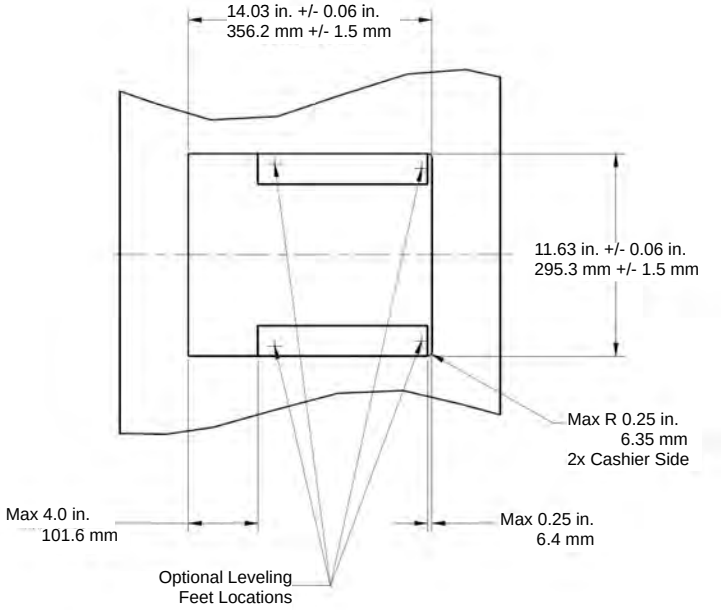


Figure 3-30 *MP6000 - Short Unit (No Scale) Counter Cutout*

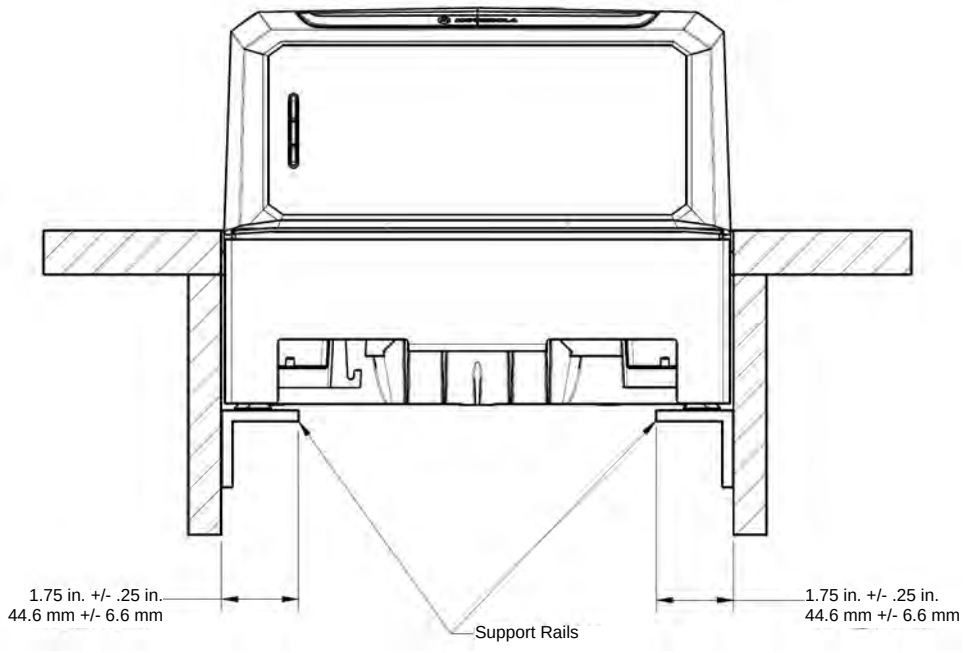


Figure 3-31 *MP6000 - Short Unit (No Scale) Front View Dimensions*

IMPORTANT Use the support rails as shown, and not a shelf. If liquid spills it pools on a shelf.

Cutout/Dimensions - MP6000 Short (continued)

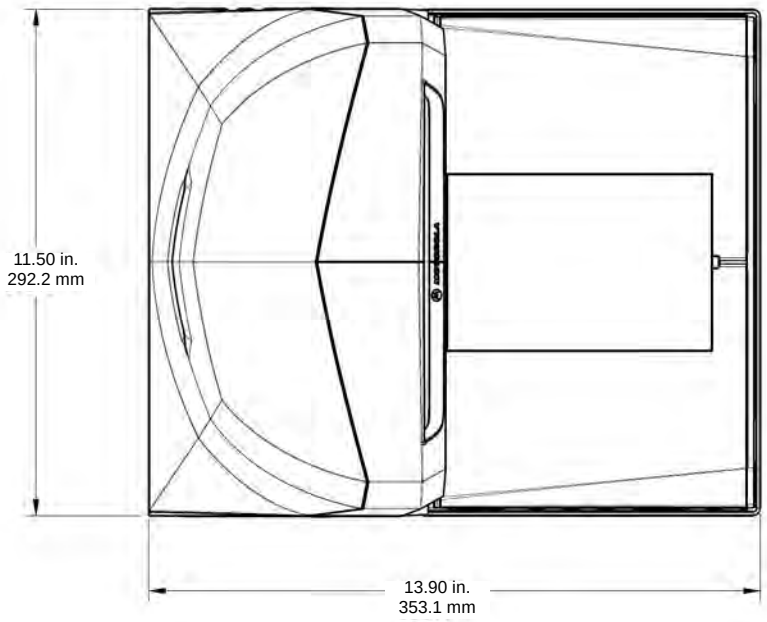


Figure 3-32 *MP6000 - Short Unit (No Scale) Top View Dimensions*

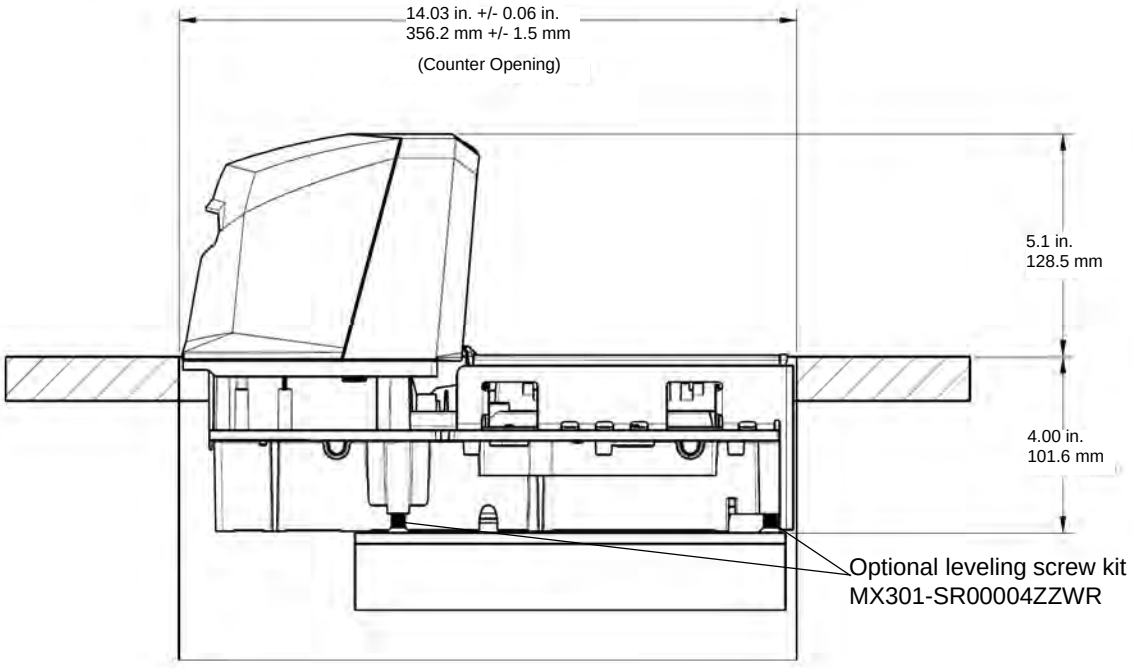


Figure 3-33 *MP6000 - Short Unit (No Scale) Side View Dimensions*

Cutout/Dimensions - MP6000 Medium

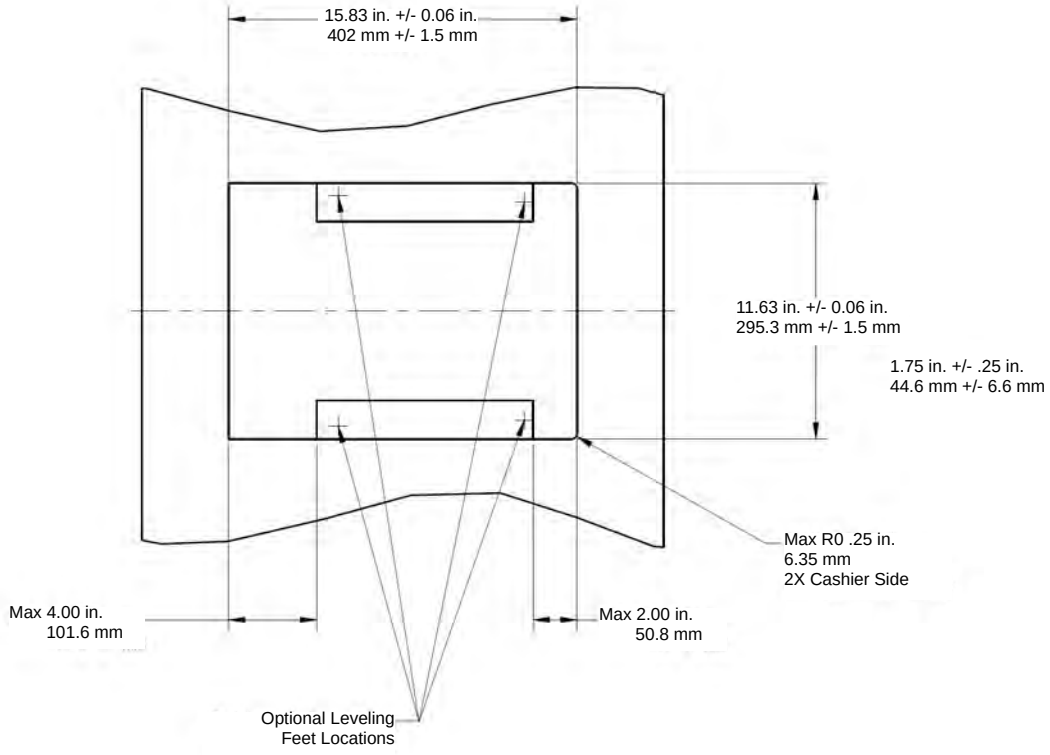


Figure 3-34 *MP6000 - Medium Unit Counter Cutout*

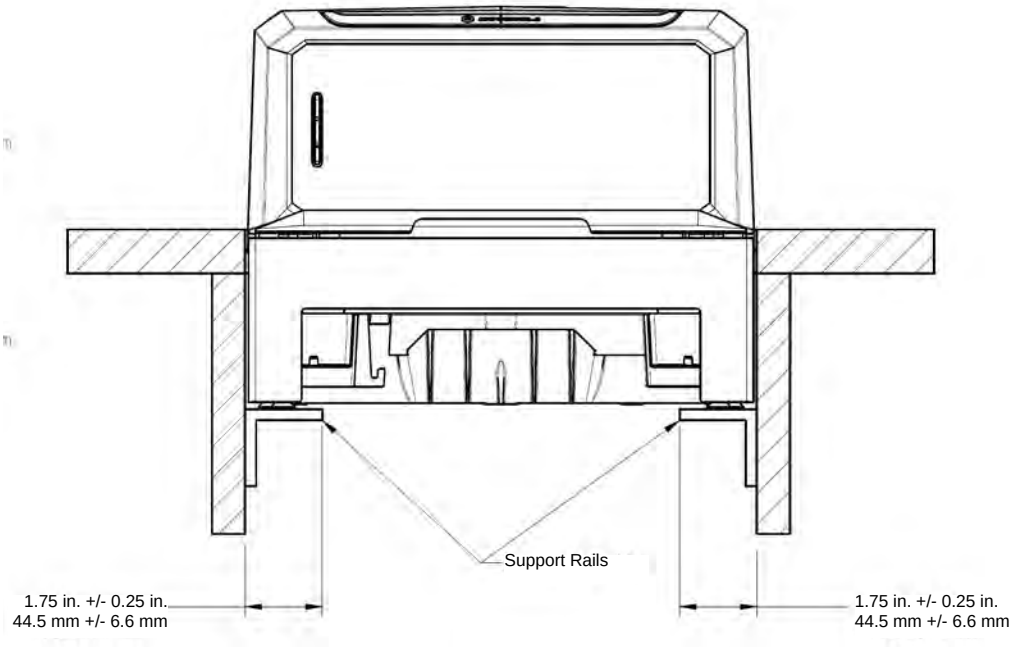


Figure 3-35 *MP6000 - Medium Unit Front View Dimensions*

IMPORTANT Use the support rails as shown, and not a shelf. If liquid spills it pools on a shelf.

Cutout/Dimensions - MP6000 Medium (continued)

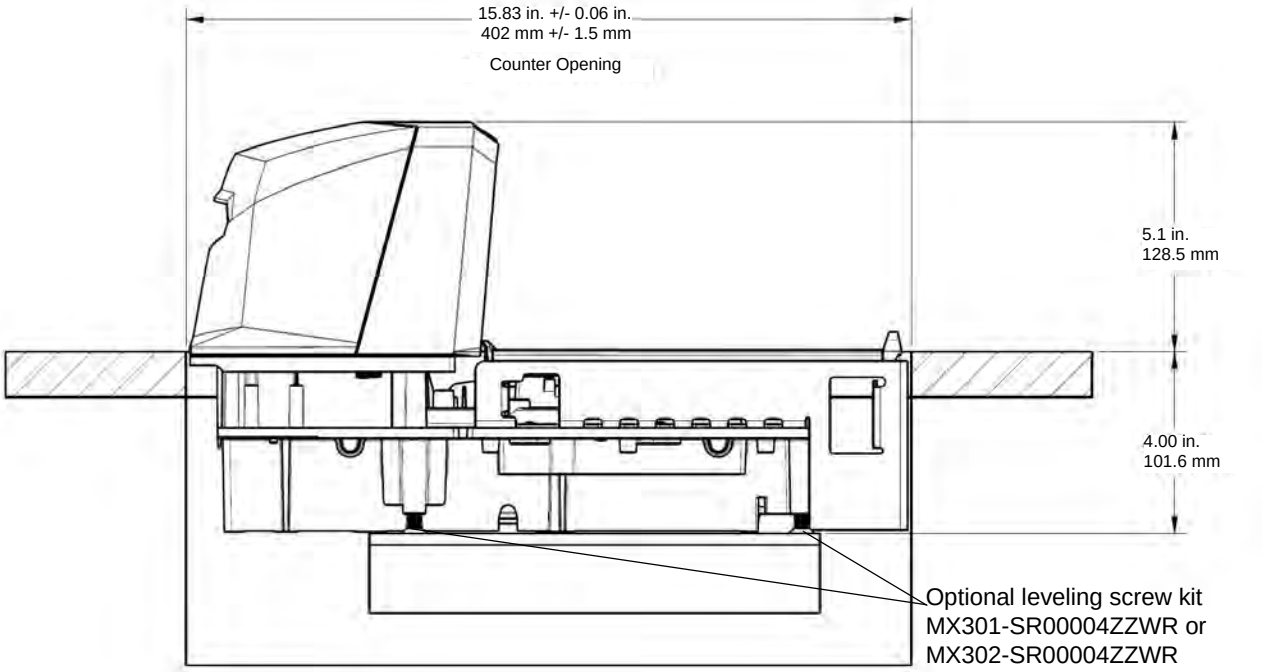


Figure 3-36 *MP6000 - Medium Unit Side View Dimensions*

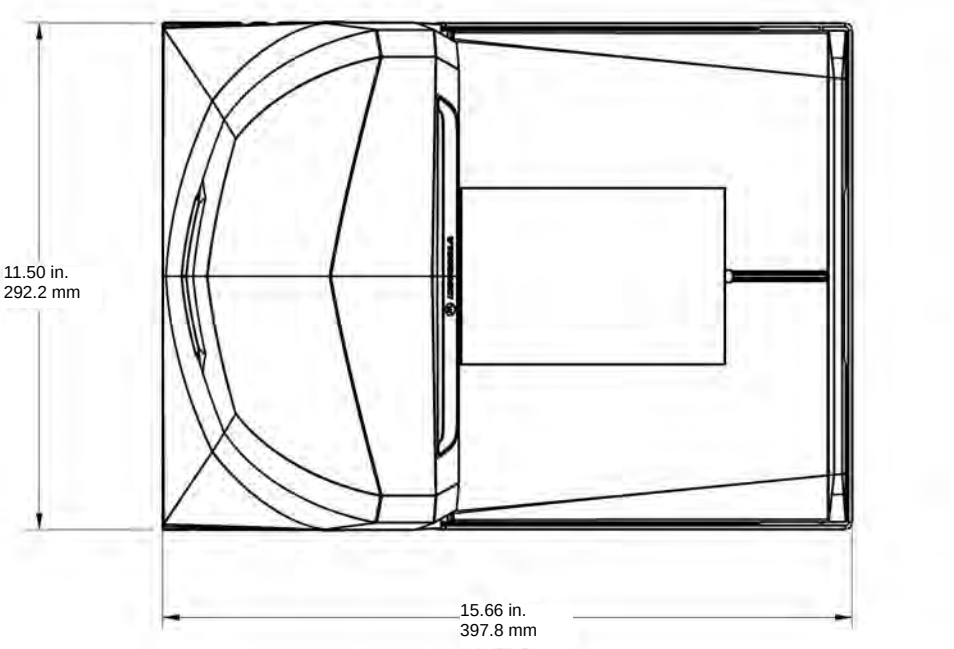


Figure 3-37 *MP6000 - Medium Unit Top View Dimensions*

Cutout/Dimensions - MP6000 Long

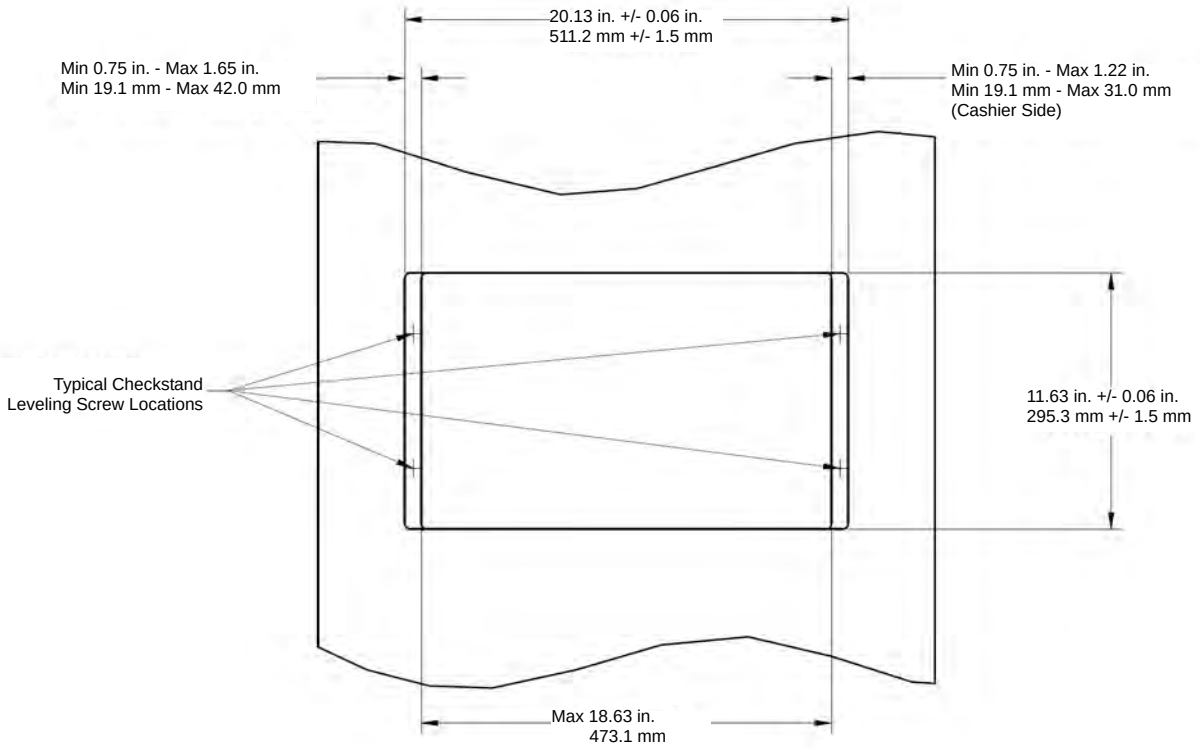

20.13 in. +/- 0.06 in.
511.2 mm +/- 1.5 mm
Min 0.75 in. - Max 1.65 in.
Min 19.1 mm - Max 42.0 mm
Min 0.75 in. - Max 1.22 in.
Min 19.1 mm - Max 31.0 mm
(Cashier Side)
Typical Checkstand
Leveling Screw Locations
11.63 in. +/- 0.06 in.
295.3 mm +/- 1.5 mm
Max 18.63 in.
473.1 mm

Figure 3-38 *MP6000 - Long Unit Counter Cutout*

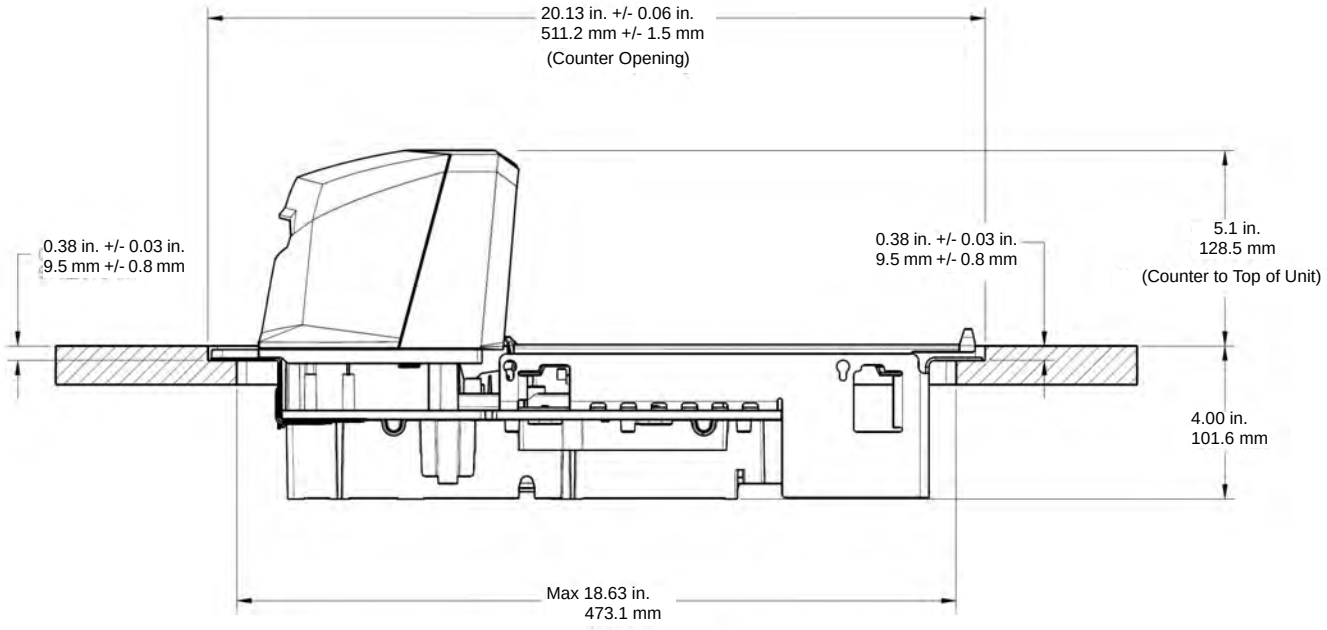


Figure 3-39 *MP6000 - Long Unit Side View Dimensions*

NOTE The countertop, after routing, must have sufficient strength to support the scanner and the loads placed on top of it. If the countertop is not strong enough, add strengthening supports underneath the countertop as required

Cutout/Dimensions - MP6000 Long (continued)

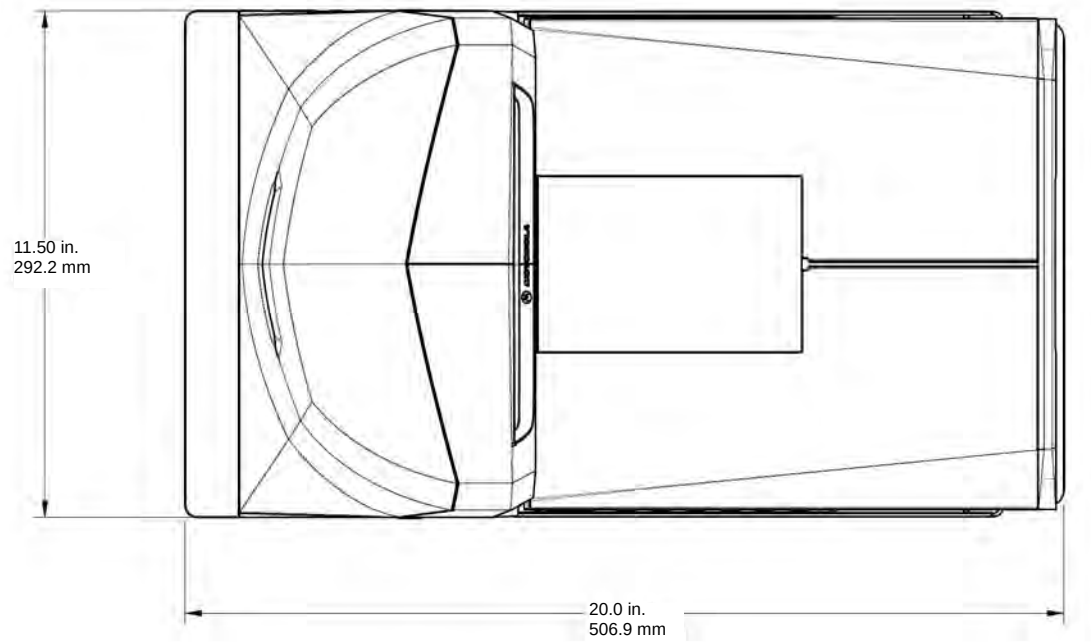


Figure 3-40 *MP6000 - Long Unit Top View Dimensions*

To install the MP6000:

1. Ensure the following items were completed:
   a. Existing scanner and accessories were removed, if applicable. See *Remove Existing Bioptic Scanner and Accessories on page 3-7*.
   b. Cables were connected and routed. See *Cables and Connections on page 3-15*.
   c. The Scale Display was installed, if applicable. See *Install the Scale Display on page 3-12*.
   d. CSS was installed, if applicable. See *Install the Customer Side Scanner (MX101) on page 3-16*.
   e. Sensormatic coil, or Checkpoint EAS antenna was installed, if applicable. See *Install Sensormatic Coils on page 3-34*, or *Install Checkpoint Antenna on page 3-37*.
2. Verify checkstand dimensions shown in *Figure 3-30*, *Figure 3-34*, and *Figure 3-38*, respectively.
3. Lower scanner in checkstand as follows.
   a. Remove the platter to access the front handle of the device (see *Installing/Removing the Long Scale Platter on page 5-8*).
   b. To grasp the MP6000 to lower it into the checkstand, use the support handle on the back of the tower cover together with the front part of the scale, or the handle in the front flange area (if installing the long model). See *Figure on page 3-32*.

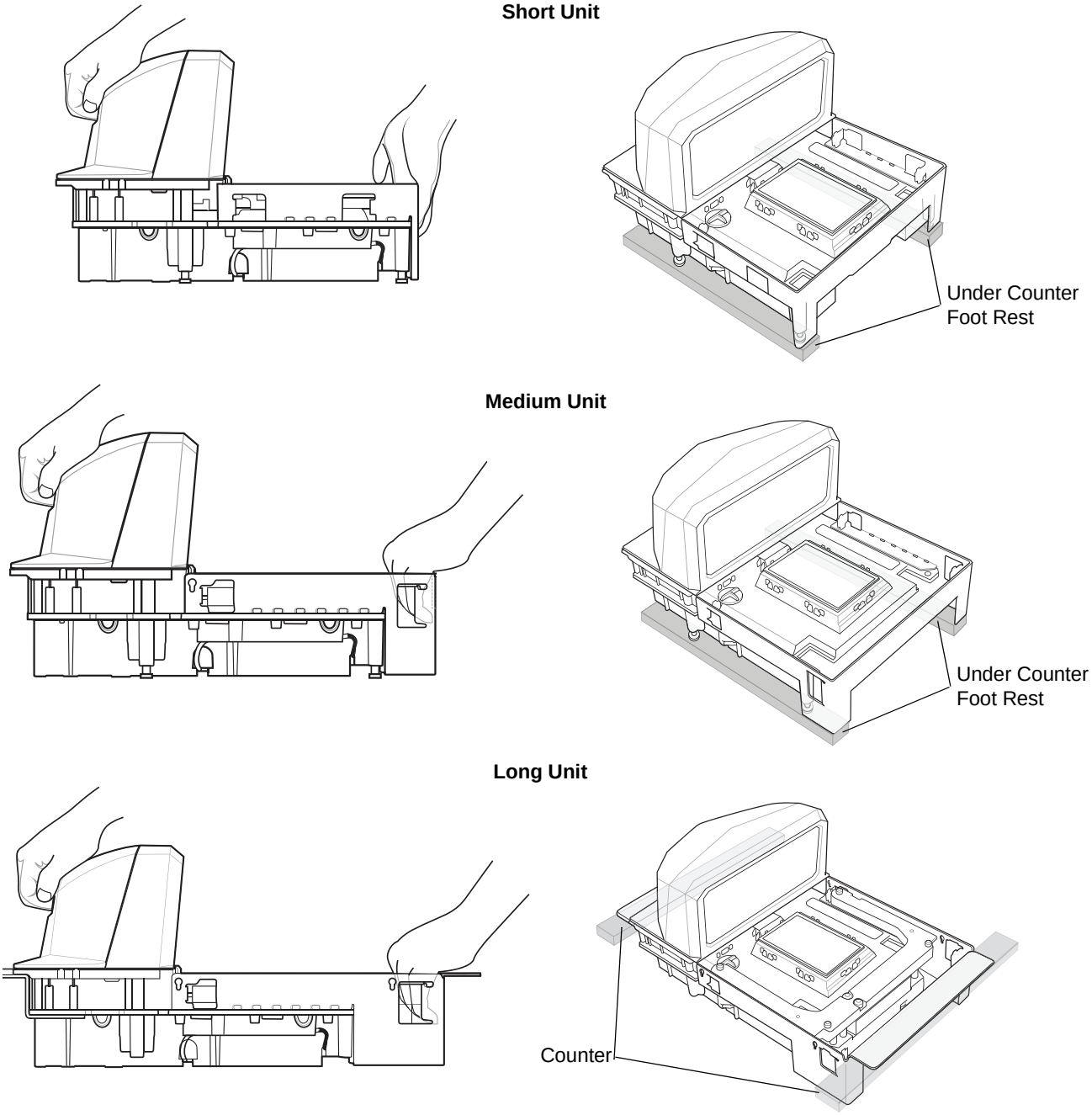


Figure 3-41 *Lowering the Short, Medium, Long MP6000 into the Counter*

c. Replace the platter.

d. Ensure the device is seated properly - see (i) for Long and (ii) for Medium and Short

i. Long MP6000: The long MP6000 should not rock on the checkstand's adjustable supports (screws), and the platter must be flush with the surrounding checkstand. If the MP6000 rocks, remove it, and adjust the checkstand supports (screws). If the MP6000 still rocks, continue to remove the device and adjust the supports until it sits solidly in the checkstand.

When the platter is flush, its leading edge should be slightly below the checkstand, and the trailing edge should be slightly above the checkstand.

To ensure smooth scanning, ensure the platter is in place, take a steel can (e.g., a soup can), turn it over so the harsher seam is facing down, and slide the can over the platter in the standard scanning direction. The can must not catch on the checkstand, or the platter when swept across all sections of the platter, in the correct direction.

For the long MP6000, secure the screws in place with lock nuts.

ii. Medium MP6000 and short (shelf mount) MP6000: If the platter is not flush, or the MP6000 rocks, adjust the optional leveling screws to place the device at the correct height. This can be done from the top of the MP6000, with the tower bezel removed and the tower cover slightly pushed back.

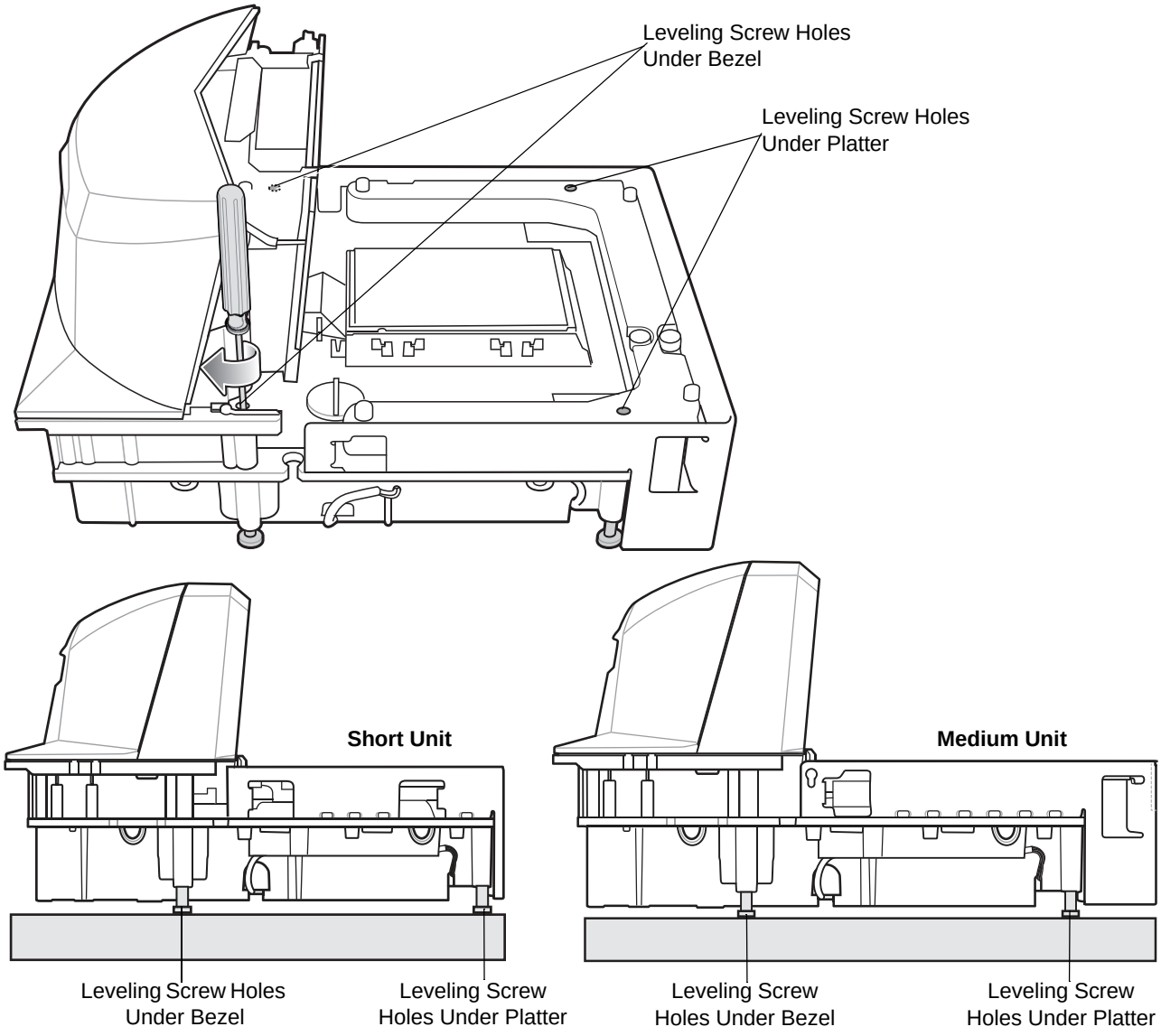


Figure 3-42 *Adjusting Leveling Screws*

IMPORTANT Leveling screws are an optional accessory for medium size models (15.7 in./39.8 cm) and short size models (13.9 in./35.3 cm) and can be ordered separately. Accessory kit MX301-SR00004ZZWR contains four standard-length screws, and accessory kit MX302-SR00004ZZWR contains four extra-length screws which will protrude 1"-inch (25 mm) below the bottom of the unit. See *Figure 1-5 on page 1-11* for the installation location of these screws and for the locations of access holes for turning the screws from above.

When the platter is flush, its leading edge should be slightly below the checkstand, and the trailing edge should be slightly above the checkstand.

To ensure smooth scanning, replace the platter, take a steel can (like a soup can), turn it over so the harsher seam is facing down, and slide the can over the platter in the standard scanning direction. The can must not catch on the checkstand or the platter when swept across all sections of the platter, in the correct direction.

4. Route all cables through the checkstand as shown in *Figure 3-3*.
5. Connect all cables to the MP6000 and POS, as needed (e.g., scale, Scale Display, Checkpoint antennas, or Sensormatic coils, POS, CSS, etc.).
6. Power up the MP6000. Upon power up, the MP6000 verifies that all sub-systems, and auxiliary devices are operational. If a fault condition exists, an error condition displays on the 7-segment display, and the startup sequence halts. Power cycling is required after rectifying the problem. (See *General Error and Warning Codes on page A-5*)

   If a scale is present, warm-up time for the scale is 15 minutes (assuming room the temperature is 70° F/20° C).

IMPORTANT Most accessories (scale, Scale Display, Checkpoint interlock, Sensormatic coils, Sensormatic RS-232 cable, CSS, and auxiliary RS-232 scanners) must be installed and connected to the MP6000 prior to applying power to the MP6000.

Install Sensormatic Coils

The horizontal antenna is installed below the platter, on the middle housing, affixed to the housing with screws. The vertical antenna is installed behind the vertical glass, also affixed to the scanner with screws. The coil tail wires (with connectors) should be properly routed alongside the scanner to which the Sensormatic controller box lead can connect.To install the Sensormatic coils:

1. Remove the MP6000 platter.Disconnect power to the MP6000.
2. Remove the MP6000 tower bezel by squeezing inward on both the left and right sides of the lower part of the tower bezel, pushing its side snaps to disengage. Slide the tower bezel up and lift out. (See *Figure 3-15 on page 3-17*.)

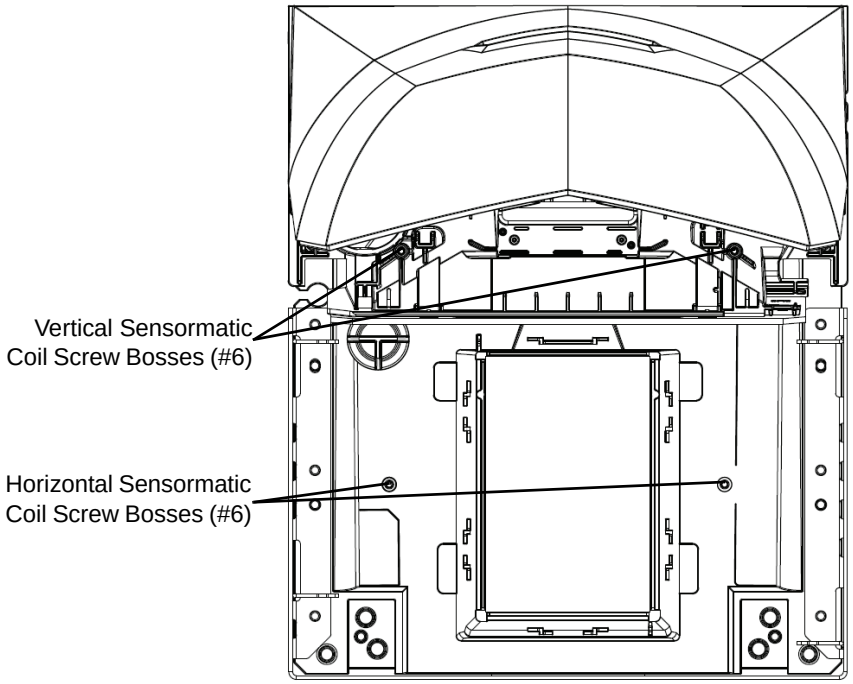


Figure 3-43 *Sensormatic Coil Screw Holes (Platter and Tower Bezel Removed)*

3. Install the horizontal coil first:

a. Grasp the wide end of the coil, angling it towards the tower.

b. Insert the coil straight in and under the tower until it stops.

c. Once in, rotate the coil down around the horizontal window.

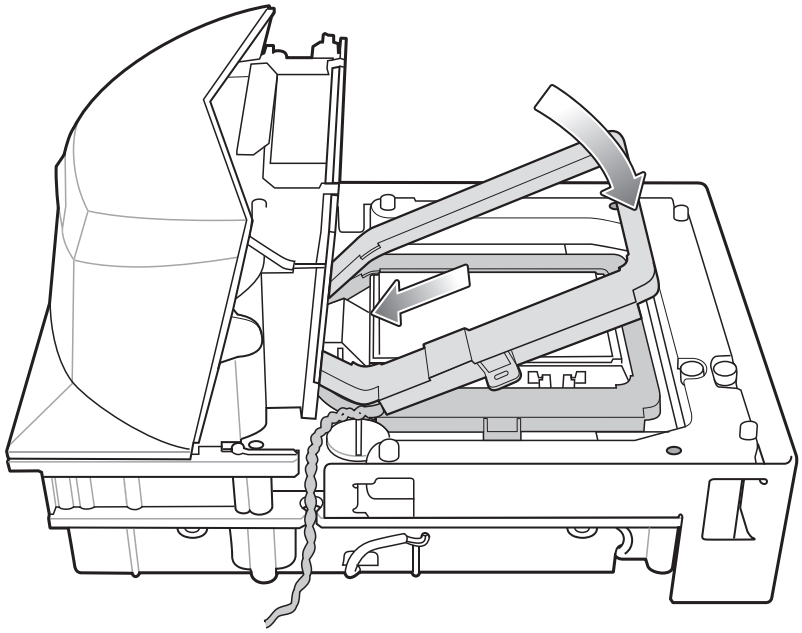


Figure 3-44 *Installing the Horizontal Coil*

4. Install the vertical coil:

a. Unplug the USB cap (see *Staging USB Flash Drive Cap/Port on page 1-11*) and move out of the way (it may interfere with the coil during this installation).

b. Position the coil in front of, and centered around the vertical window.

c. Push it straight back until the top of the coil rests against the stops.

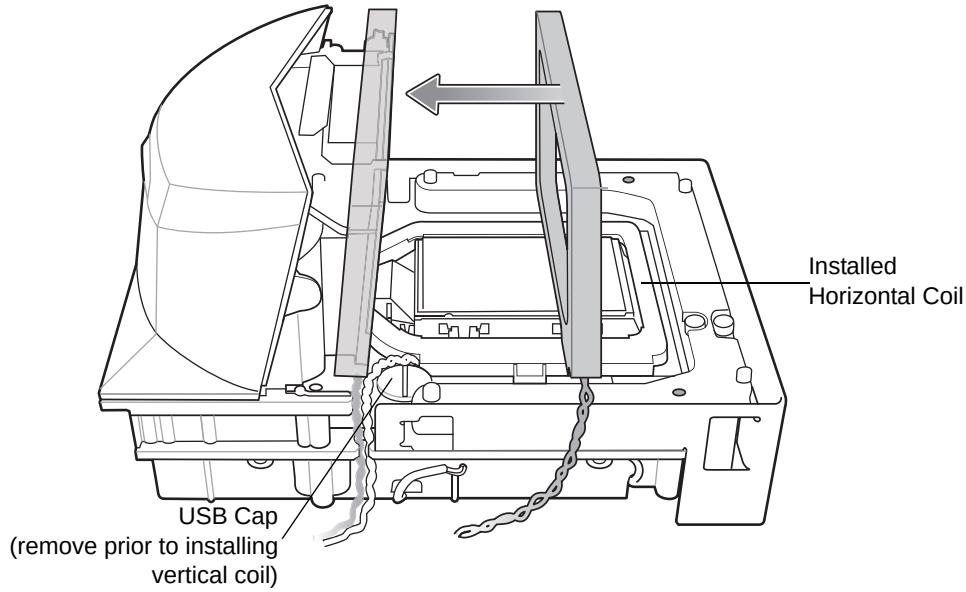


Figure 3-45 *Installing the Vertical Coil*

d. Replace the USB cap.

e. Secure each coil with two screws (see *Figure 3-43 on page 3-34*).

5. Route the coil wires through the key hole on the side of the MP6000 for connection to the controller box. Leave the wires free, under the MP6000, for a Sensormatic representative to make the connection to the controller.

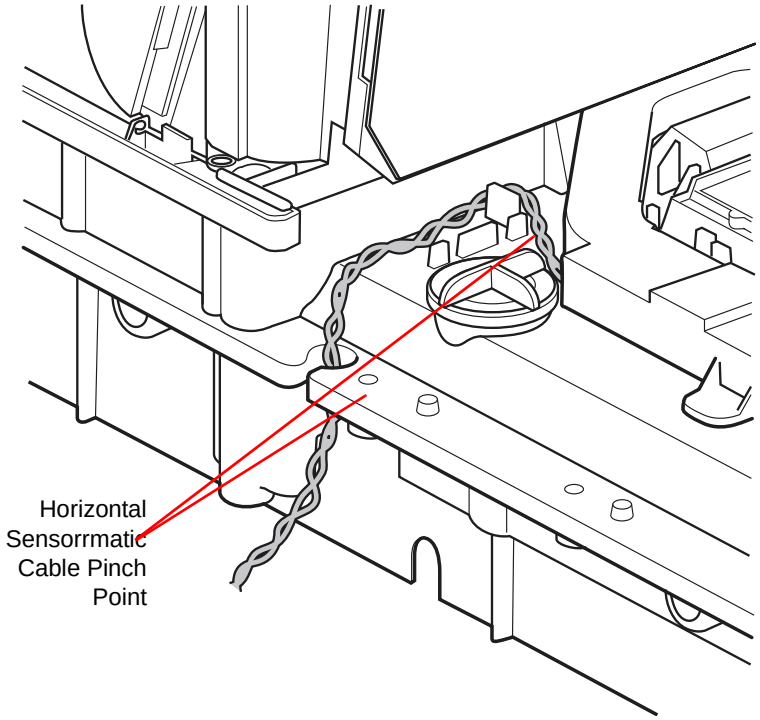


Figure 3-46 *Routing the Coil Through the Key Hole*

6. Replace the MP6000 tower bezel.

7. Replace the MP6000 platter.

8. Connect the Interlock cable (supplied by Sensormatic) to the J7, or J5 port.

NOTE The Interlock cable is one of the *free* cables noted in Step *5*.

Install Checkpoint Antenna

The Checkpoint EAS single axis wire loop antenna should be looped around the middle housing of the MP6000, under the platter, and should route through the pinch points as shown in *Figure 3-47*. There is no vertical antenna. (See *Scale Cable Channel on page 1-10* for cable assembly routing.)

The antenna leads, with partly-stripped ends, should be routed as pictured, hanging several inches below the MP6000 so that the Checkpoint controller lead wires can tie into the antenna.

A cable with two additional leads is available to support Interlock features. The Interlock cable assembly part number is CB000002A01, orderable as CBA-A54-S01EAR (includes a connector, and a pigtail for Checkpoint).

Contact your local Checkpoint representative to install the EAS cable to the Checkpoint System. Refer to the Checkpoint device documentation for details about its functionality.

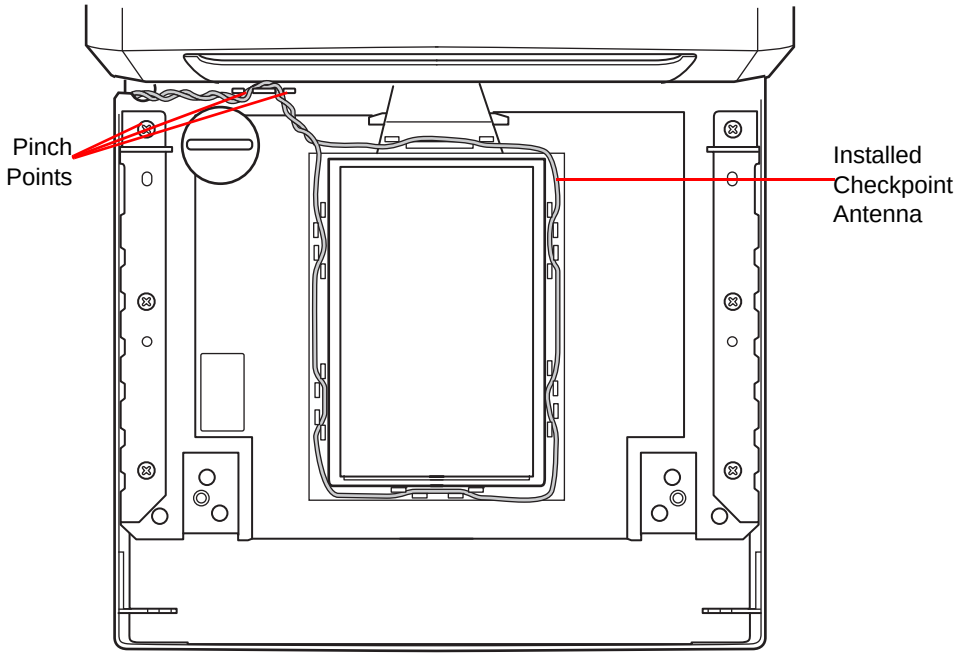


Figure 3-47 *Checkpoint Antenna Installation*

Trim Kit Installation (If Required)

The MX303-SR00004ZZWR trim kit can be used to modify the long MP6000/scale to fit into a counter cut-out previously occupied by a 12 in. wide NCR scanner/scale. The trim can be mounted on either side of the MP6000. It should be installed in the downstream side of the conveying goods. The trim adds 0.5 in. (1.2 cm) to the width of the MP6000.

The kit includes one metal trim, and two Phillips head screws (M4 x 8mm).

To install the trim:

1. Insert the two screws provided in the rail.
2. Orient the adapter as shown in the illustration.

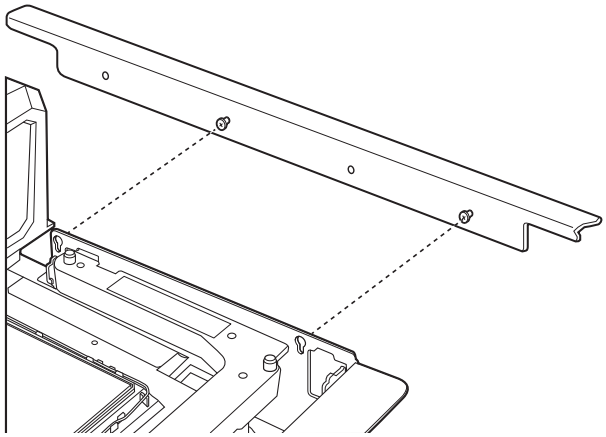


Figure 3-48 *Orient the Adapter*

3. Attach the side rail to the MP6000, and tighten using a Phillips head screwdriver.

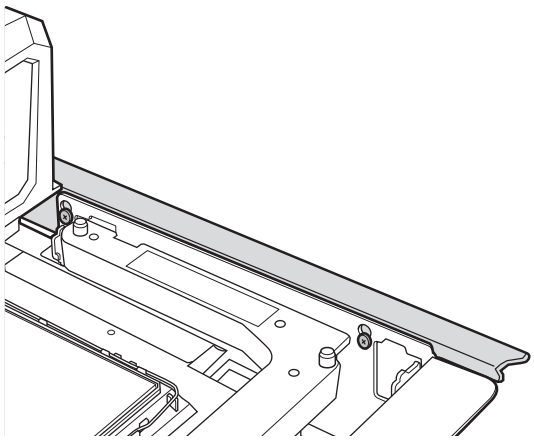


Figure 3-49 *Attach the Adapter*

MP6000 Mounting Frame (If Required)

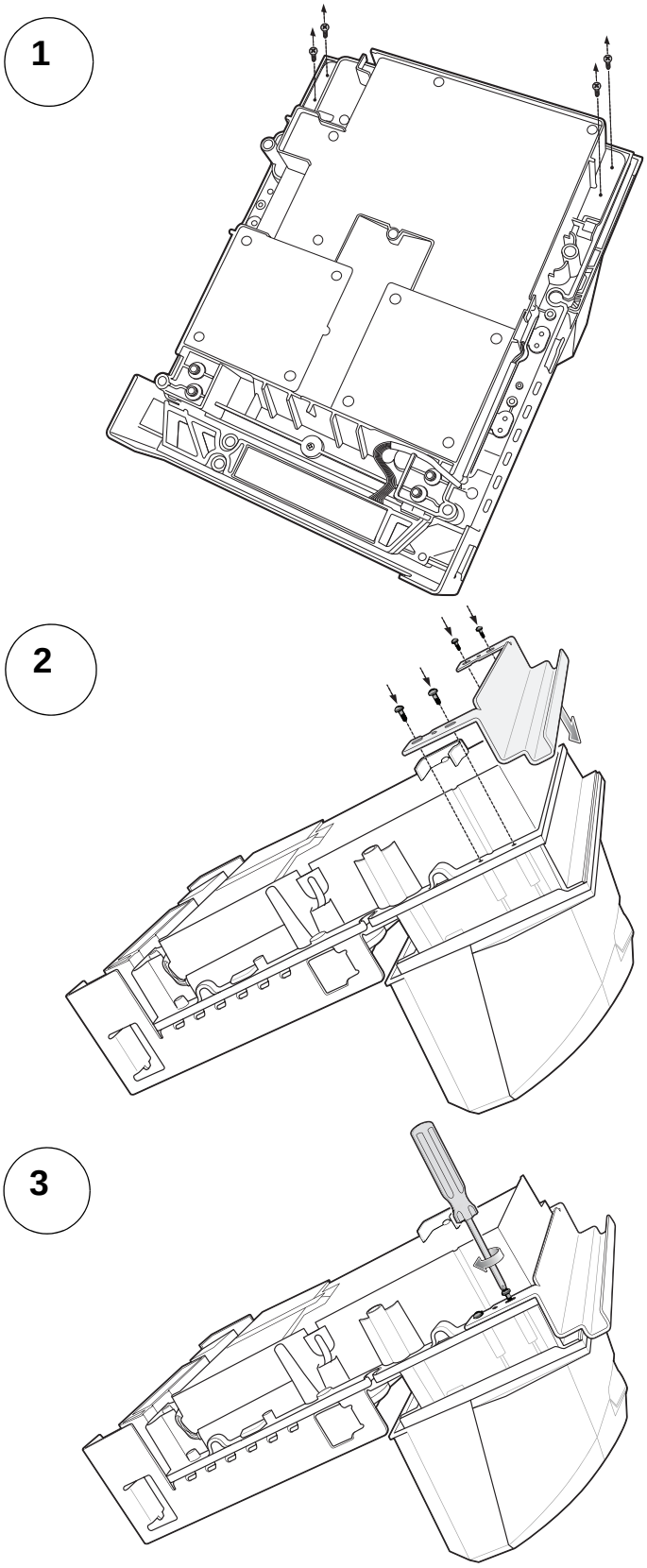


Figure 3-50 *Installing the Mounting Frame*

CHAPTER 4 SCALE CALIBRATION (MODELS WITH A SCALE ONLY)

Overview

This chapter describes how to calibrate the scale in the MP6000, and how to program its features.

The parameter bar codes included in this chapter are listed in *Table 4-1*.

NOTE All scanner programming bar codes and additional scale parameter bar codes are located in the *MP6000 Bar Code Programming Guide* (p/n 72E-172633-xx).

Table 4-1 *Scale Parameters in this Chapter*

Parameter	Parameter Number	Parameter Name (* = Default)	Page Number
Legal Scale Units	995	Kilograms (default)	*4-13*
		Pounds	*4-14*
Scale Display Configuration	986	Disable Scale Display (default)	*4-16*
		Enable Scale Display	*4-15*
Legal Scale Dampening Filter	996	Higher Vibration Sensitivity	*4-17*
		Low Vibration Sensitivity (default)	*4-18*
		Very Low Vibration Sensitivity	*4-19*
		Ultra Low Vibration Sensitivity	*4-20*

Scale Calibration Procedure (Scanner/Scale Configurations Only)

Follow the steps below to calibrate the scale.

NOTES

1. The 30 second timer, or 90 second timer for Firmware versions before 3.4 (see *Identifying Firmware Version*), resets after each successful stage of the calibration procedure (not applicable at the *Step 5 - Calibration Success or Failure* stage).
2. If a Scale Display is unavailable, the internal 7-segment one character display can be used as a user interface to prompt a user through the steps of the scale calibration procedure.
3. The scale can be calibrated without a Scale Display. However, if a Scale Display is used **Enable Scale Display Configuration** (page *4-15*) must be scanned to enable the display and its port. The default Scale Display configuration is: Disabled.
4. The MP6000 scanner/scale must remain powered for a minimum of 15 minutes after a cold power start prior to performing the calibration procedure.
5. At any time during the calibration process: if the units of measure are modified (e.g., lb to kg), and a 90 second timeout is completed, the Scale Display flashes *CAL* and the 7-segment display has a U14 warning code (indicating *Scale Out of Calibration*).

Scale Configurations

Table 4-2 *Scale Configurations*

Description
Single interval 0.01 lb (0.005 kg), without calibration switch (model # ending in -06).
Dual interval 0.005 lb (0.002 kg) minimum verification interval, without calibration switch (model # ending in -08).

IMPORTANT The MP6000 platter can be removed to see the model number of the scale. The model number is printed on a label affixed to the right side of the bottom bar of the scale's U frame. The last two digits in the model number define the scale's configuration (see *Table 4-2*).

Identifying Firmware Version

A new *Calibration Entry Method* is required for Firmware Version 3.4 and later. To determine the firmware version on the scanner, depress and continue to hold the **EAS** button. The scanner firmware version number displays on the internal 7-segment display.

The existing *Calibration Entry Method* should be used for firmware version prior to firmware version 3.4.

Step 1 - Electronic Entry into Calibration Mode

Encompasses all scales sold ***without*** a mechanical calibration switch installed. When the integrated scale does not have a calibration switch, electronic entry is required.

Firmware Versions Older Than v3.4

To perform an electronic calibration entry:

- Touch **Scale Zero** and **Volume/Tone** simultaneously for five consecutive seconds (see *Features of the MP6000 on page 1-9* for the location of these buttons on the front panel).

Firmware Versions Newer Than v3.4

To perform an electronic calibration entry:

- Press and hold the **Scale Zero** and **Volume** buttons continuously for five seconds. After five seconds a short beep sounds. Release the **Scale Zero** and **Volume** buttons.
- Within two seconds after releasing the buttons, press the **Scale Zero** and **Volume** buttons again and release. After release the system sounds five long beeps and enters scale calibration.

When Calibration Mode is entered successfully, the scanner emits five long beep sounds. The optional Scale Display blinks *CAL00* and *CAL _ _* and the 7-segment display scrolls C00Lb, or C00g. Once the scale Calibration Mode is successfully entered, continue the Calibration process with *Step 2 - Program Legal Parameters on page 4-3*.

IMPORTANT If Calibration Mode was not entered successfully, the scale remains in its current state.

Step 2 - Program Legal Parameters

Sealable and legal parameters (*Unit Selection* and *Dampening Filter Setting*) can only be programmed/changed when the MP6000 is placed into Calibration Mode. There is no requirement to change these values (they can remain in the default or present state). However, if there is a need to change their values they must be programmed when the scale is in a Calibration Mode. The *Dampening Filter Setting* can be changed multiple times during a Calibration Mode without affecting the calibration outcome.

After completing these changes, the calibration process re-starts with *Step 3 - Calibration at NO LOAD on page 4-4*. If you change the *Unit Selection* value before successfully reaching *Step 5 - Calibration Success or Failure on page 4-7* and the Calibration Mode exits, the scale will be non-operational. The scale will have to be successfully calibrated before it becomes operational.

Legal Scale Units (Unit Selection) - Kilograms or Pounds

To change the legal parameter *Unit Selection* (when the scale is in a Calibration Mode):

1. Verify the units of weight measurement by checking the *Scale Display* icon (the icon displays either *lb* or *kg* units), or the 7-segment display which scrolls either Lb or g units (g indicates kg units).

2. If the weight unit needs to be changed (e.g., from *kg* units to *lb* units or vice-versa), scan the appropriate *Legal Scale Units* bar code (see *Legal Scale Units on page 4-13*). If you do not change the default, or current weight unit, the scale calibrates with the default (*kg*) or previously programmed unit.

NOTE The unit selection legal parameter can be scanned at any time after entering a Calibration Mode. After a successful scan, Calibration Mode restarts at *Step 3 - Calibration at NO LOAD on page 4-4*.

Additional scale parameter bar codes are located in the *MP6000 Bar Code Programming Guide* (p/n 72E-172633-xx).

Important Notes

1. Automatic zero setting is enabled for metric scales (kg), and disabled for US scales (lb).
2. Automatic zero setting, if enabled, is performed if weight has remained below zero, and stable (i.e., no motion on the platter) for at least 5 seconds. The scale is automatically set to zero when the 5 seconds expires.
3. If the weight units change from lb to kg, this setting is enabled after a cold power start of the MP6000. A scale reset (e.g., via the Scale Reset **STISCLRST** bar code) WILL NOT enable this setting. Likewise, if weight units change from kg to lb, this setting is disabled. This setting is illegal for US (lb) scales.

Legal Scale Dampening Filter

Set the scale sensitivity to vibration by scanning the appropriate bar code (see page *4-18*). To program this parameter, the scale must be in Calibration Mode. Bar code command values are as follows:

- 0 = Higher (most sensitive to vibration)
- 1 = Low (factory default)
- 2 = Very Low
- 3 = Ultra Low

The lower the number, the more sensitive the scale is to vibration. The higher the number, the slower the scale may operate.

Step 3 - Calibration at NO LOAD

IMPORTANT This step of the calibration procedure must be completed within 30 seconds, or 90 seconds for Firmware Version before 3.4. (See *Identifying Firmware Version*.) If this time expires before completing the step then the calibration procedure is exited.

When Calibration Mode enters properly, the Scale Display blinks between *CAL00* and *CAL _ _* and the 7-segment display scrolls C00Lb, or C00g. Scale calibration can begin.

1. Ensure the platter is installed and there is NO WEIGHTED LOAD on it.
2. Touch the **Scale Zero** button on the front panel.
3. If *Calibration at NO WEIGHTED LOAD* is successful after the **Scale Zero** button is pressed, the process continues with *Step 4 - Calibration at LOAD on page 4-5*.
   or
   If *Calibration at NO WEIGHTED LOAD* is not successful after the **Scale Zero** button is pressed, the process continues with *Calibration Failure on page 4-7*.

Step 4 - Calibration at LOAD

IMPORTANT This step of the calibration procedure must be completed within 30 seconds, or 90 seconds for Firmware Version before 3.4. (See *Identifying Firmware Version*.) If this time expires before completing the step then the calibration procedure is exited.

- The Scale Display blinks either *CAL25* or *CAL11*, depending on the units of measure programmed (*CAL25* = pounds; *CAL11* = kilograms).
- The diagnostic 7 -segment display scrolls *C25Lb* or *C11g*.

To continue with calibration:

1. Depending on the units of measure programmed, place 25 lb or 11 kg on the scale. Ideally these weights should be grouped in the center of the scale (*Figure 4-1*).

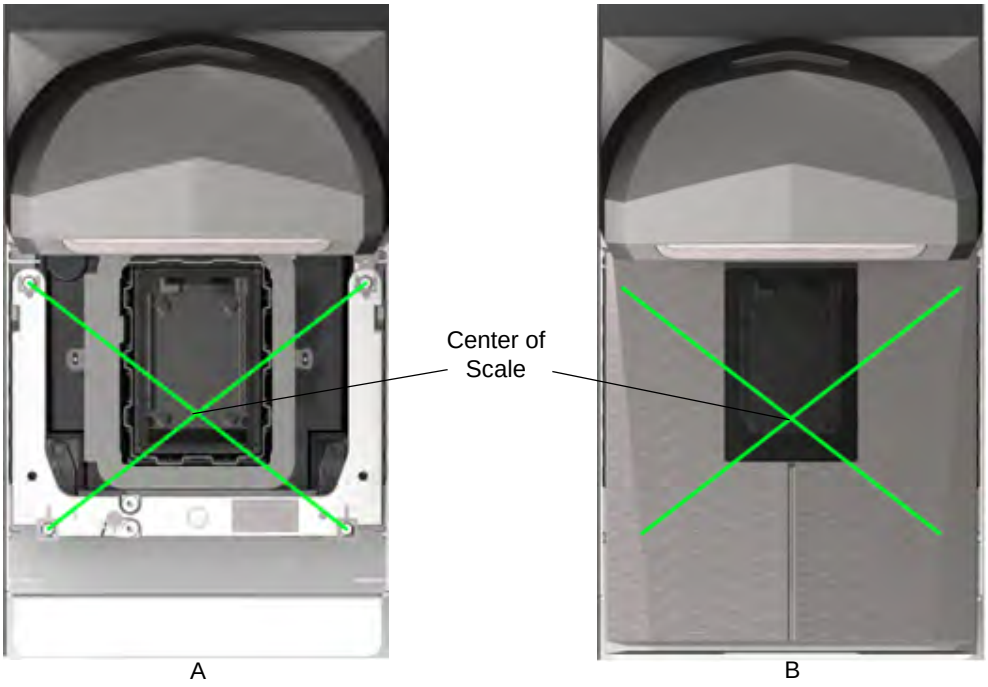


Figure 4-1 *(A) Center of Scale Location, and (B) Center of Scale Location with Platter Installed*

a. Place 25 lb weights on the scanner as shown in *Figure 4-2*; three 5 lb weights centered on the center of the scale, and two 5 lb weights centered on top.

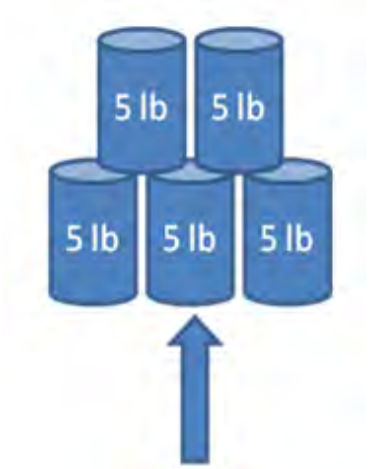


Figure 4-2 *Weight Calibration Configuration for Pounds*

b. Place 11 kg weights on the scanner as shown in *Figure 4-3*; two 5 kg weights centered on the center of the scale, and one 1 kg weight on top between the two 5 kg weights.

Figure 4-3 *Weight Calibration Configuration for Kilograms*

2. Press the **Scale Zero** button with the weights on the platter.
3. Calibration continues with *Step 5 - Calibration Success or Failure on page 4-7*. Calibration was either successful or failed at this step.

Step 5 - Calibration Success or Failure

Calibration Success

The calibration process is successful if the Scale Display blinks between *CAL P* and *CAL S*, and the 7-segment display scrolls between CAL P and CAL S.

NOTE P = pass; S = Save and Reset the Scale.

There are two ways to finalize the calibration process:

1. After the Scale Display starts blinking between *CAL P* and *CAL S*, remove the weights from the scale.
2. Touch the **Scale Zero** button for the scale to reset. The MP6000 scanner/scale emits three short beeps to indicate that the calibration was successful and all parameters are saved.

   or

   Scan the **Scale Reset** bar code (or issue an equivalent RSM command to the MP6000 scanner/scale). All programming bar codes are available in the *MP6000 Bar Code Programmers Guide*, p/n 72E- 172633-xx.

   NOTE **Scale Reset** can be scanned at anytime in the procedure to exit the calibration process with no impact (as long as a *Legal Parameter* was not changed during calibration).

3. The scale is ready to measure weight.

Calibration Failure

It is possible to encounter a failure condition in which the calibration process is interrupted. In this case, use the error message indicators to fix the problem and re-start the calibration process.

If calibration failed, the Scale Display blinks *CAL F*, and the error code u## scrolls on the 7-segment display (see *Table A-2 on page A-6* for error descriptions).

Possible Reasons for a Fail

- The scale returns to its prior state if *Step 3 - Calibration at NO LOAD* executes and the Scale Display blinks *HOLD* for the entire 90 second time period, and then times out. This condition does not display a calibration failure because the process was unable to find a zero weight threshold. This may occur if the platter was not re-installed or seated correctly, or if the weight on the scale is outside a +/- 2% maximum capacity range (+/- 0.6 lb or +/- 0.3 kg). It can also be a mechanical issue if the scale was not installed correctly.
- The scale returns to its prior state if *Step 4 - Calibration at LOAD* executes but the scale was unable to detect a load of 25 lb (or 11 kg, depending on the units of measure programmed). This may occur if the correct weights were not placed on the platter before pressing the **Scale Zero** button. It can also be a mechanical issue if the scale was not installed correctly.

In either case the scale can not accept the calibration, and returns to its prior state. There is no impact on the sealed calibration counter or the scale legal parameter counter. However, if calibration fails, the scale is non-operational until the problem is fixed and the scale is successfully calibrated. In this case, re-enter the Calibration Mode (*Step 1 - Electronic Entry into Calibration Mode on page 4-3*). The scale does not have to be reset and can be left on before re-entering Calibration Mode.

Calibration Mode Exit Conditions

Calibration Mode exits under the following conditions:

- No response is received from an external operator for 30 seconds (Firmware Version 3.4 or later) or 90 seconds (Firmware Version pre-3.4). This timeout does not apply at *Step 5 - Calibration Success or Failure*.
- The operator turns the MP6000 off.
- *Step 4 - Calibration at LOAD* completes successfully, or unsuccessfully (fails).
- A user scans **Scale Reset** (refer to the *MP6000 Bar Code Programming Guide*, p/n 72E-172633-xx). When **Scale Reset** is scanned, a test runs, showing a series of characters on the optional Scale Display. When the test completes, the scale returns to its prior state before entering a scale Calibration Mode. See *Table 4-6 on page 4-21* (*Cold reset of scale*) for the character sequence displayed.

Verification Test

Table 4-3 describes the five tests needed to verify whether or not the scale was calibrated successfully.

Table 4-3 *Tests to Verify Scale Accuracy*

Test	Description
Increasing Load Test	This test verifies accurate weight measurement with increasing weights placed incrementally on the scale's platter, without returning weight to zero.
Over Capacity Test	This test verifies that the correct indication appears on the Scale Display when the maximum weight is exceeded.
Decreasing Load Test	This test verifies accurate weight measurement with decreasing weights removed incrementally from the scale's platter, without returning weight to zero.
Return to Zero Test	This test verifies that the scale returns to zero when all weights are removed.
Shift Test	This test verifies accurate weight measurement in all quadrants.

The verification tests outlined in *Table 4-4* and *Table 4-5* can be run in successive order. Use the appropriate table based on US (lb), or metric scales (kg), using applicable tolerance for single or dual interval scale models.

Table 4-4 *Verification Tests for US (lb) Scales*

Verification Test for US Scale Applied Load lb	Indication = Applied Load Within Applicable Tolerances	All Tolerances Are +/-	All Tolerances Are +/-
		Acceptance Single Int	Acceptance Dual Int
Increasing Load Test			
0.00	0.00	0.0 lb	0.0 lb
0.10	0.10	.005 lb	.0025 lb
5.00	5.00	.005 lb	.005 lb
10.00	10.00	.01 lb	.005 lb
20.00	20.00	.01 lb	.01 lb

Table 4-4 *Verification Tests for US (lb) Scales (Continued)*

Verification Test for US Scale Applied Load lb		Indication = Applied Load Within Applicable Tolerances	All Tolerances Are +/- Acceptance Single Int	All Tolerances Are +/- Acceptance Dual Int
30.00		30.00	.015 lb	.015 lb
Over Capacity Test				
Over Capacity 30.20		EEEE	N/A	N/A
Decreasing Load Test				
30.00		30.00	.015 lb	.015 lb
20.00		20.00	.01 lb	.01 lb
10.00		10.00	.01 lb	.005 lb
5.00		5.00	.005 lb	.005 lb
0.10		0.10	.005 lb	.0025 lb
Return to Zero Test				
0.00		0.00	0.0 lb	0.0 lb
Shift Test (see *Figure 4-4*)				
10.00	Position 1	10.00	.01 lb	.005 lb
10.00	Position 2	10.00	.01 lb	.005 lb
10.00	Position 3	10.00	.01 lb	.005 lb
10.00	Position 4	10.00	.01 lb	.005 lb

Table 4-5 *Verification Tests for Metric Scale*

Verification Test for Metric Scale Applied Load kg	Indication = Applied Load Within Applicable Tolerances	All Tolerances Are +/- Acceptance Single Int	All Tolerances Are +/- Acceptance Dual Int
Increasing Load Test			
0.000	0.000	0.0 kg	0.0 kg
0.100	0.100	.0025 kg	.001 kg
2.500	2.500	.0025 kg	.002 kg
5.000	5.000	.005 kg	.003 kg
10.000	10.000	.005 kg	.005 kg
15.000	15.000	.0075 kg	.0075 kg

Table 4-5 *Verification Tests for Metric Scale (Continued)*

Verification Test for Metric Scale Applied Load kg		Indication = Applied Load Within Applicable Tolerances	All Tolerances Are +/- Acceptance Single Int	All Tolerances Are +/- Acceptance Dual Int
Over Capacity Test				
Over Capacity 15.100		EEEE	N/A	N/A
Decreasing Load Test				
15.000		15.000	.0075 kg	.0075 kg
10.000		10.000	.005 kg	.005 kg
5.000		5.000	.005 kg	.003 kg
2.500		2.500	.0025 kg	.002 kg
0.100		0.100	.0025 kg	.001 kg
Return to Zero Test				
0.000		0.000	0.0 kg	0.0 kg
Shift Test (see *Figure 4-4*)				
5.00	Position 1	5.000	.005 kg	.003 kg
5.00	Position 2	5.000	.005 kg	.003 kg
5.00	Position 3	5.000	.005 kg	.003 kg
5.00	Position. 4	5.000	.005 kg	.003 kg

The weight checked at each position on the scale, shown in *Figure 4-4*, represent halfway between the center of the platter and corner. Use a stack configuration of weights if needed (i.e., (2) 5.00 lb weights, or (2) 2.500 kg weights) depending on the units of measure programmed.

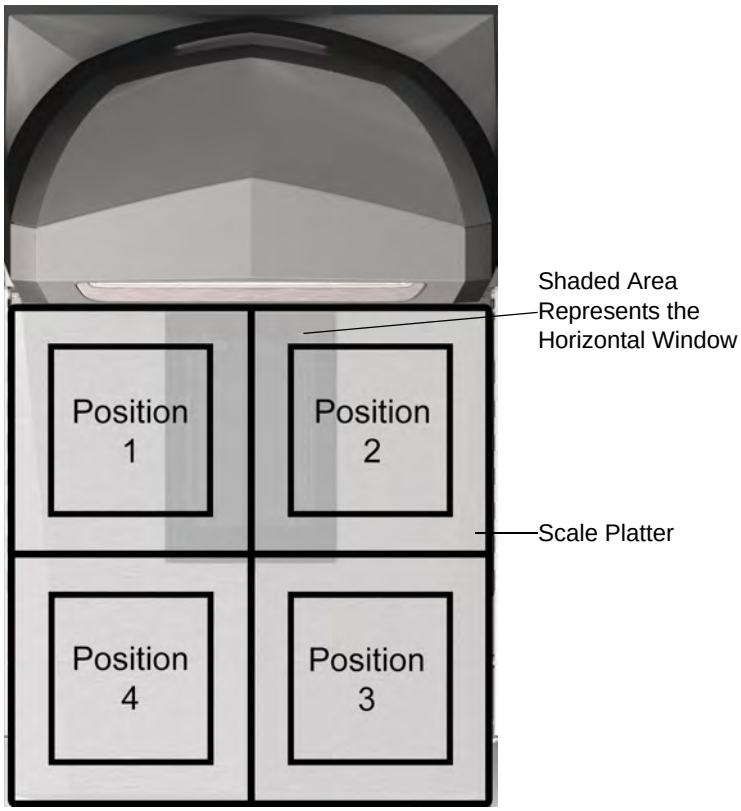


Figure 4-4 *Weight Positions on the Scale Platter*

While performing a shift test, the indication of each position is within the applicable tolerance and the range of results obtained should not exceed twice the applicable tolerance.

IMPORTANT After verification, record/report audit trail information to the local Weights and Measure authority where required by law.

Audit Tallies

Audit Tallies (calibration counter = C, legal parameter counter = P) used for scale verification can be shown on the Scale Display, or the 7-segment display.

1. Press and hold the **Scale Zero** button for three seconds to access the calibration tallies (not within *Calibration* mode).
   a. C### and P### tallies blink on the Scale Display and/or scroll on the 7-segment display.
      i. C### represents the number of times the scale reached *Calibration Success on page 4-7*. (Only successful calibrations are counted.)
      ii. The P### represents the number of times any sealable parameter, or legal parameter was changed with or without reaching *Calibration Success on page 4-7*.

2. When the **Scale Zero** button is released, the scale returns to normal operation, and the tallies are removed from both displays.

   NOTE 1. This feature is inhibited when the unit is in a scale Calibration Mode.

   NOTE 2. If units of weight measure was modified (i.e., kg to lb, or lb to kg) the parameter counter is incremented by two in the audit tally. This is because the **Automatic Zero Setting** legal parameter is being enabled when going from lb to kg, and disabled when going from kg to lb.

3. After verification, seal the scale by recording/reporting Audit Trail information as required by local Weight & Measures Regulations, or where required by law.

Scale Configuration Parameters

NOTE Refer to the *MP6000 Bar Code Programming Guide*, p/n 72E-172633-xx, for all programming bar codes for the MP6000/scale.

Legal Scale Units

Parameter # 995

Scan a weight unit below to set the legal weight units for the MP6000. Scan **Kilograms** for metric units; scan **Pounds** for the US units.

IMPORTANT The scale must be in a calibration mode to change this parameter.

*** Kilograms**
(0)

Legal Scale Units (continued)

Pounds
(1)

Scale Display Configuration

Parameter # 986

Scan **Enable Scale Display Configuration** below to enable the Scale Display port. The Scale Display port is disabled by default.

Enable Scale Display Configuration (1)

Scale Display Configuration (continued)

*** Disable Scale Display Configuration (0)**

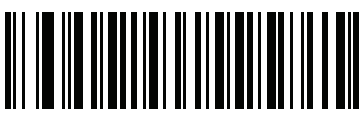
Legal Scale Dampening Filter Setting

Parameter # 996

Scan a bar code below to set the vibration sensitivity of the scale. The lower the number value, the more sensitive the scale is to vibration. The scale must be in a Calibration Mode to program this parameter.

Values:

- 0 = Higher (most sensitive to vibration)
- 1 = Low (factory default)
- 2 = Very Low
- 3 = Ultra Low



Higher Vibration Sensitivity (0)

Parameter # 996 (continued)

*** Low Vibration Sensitivity (1)**

Parameter # 996 (continued)

Very Low Vibration Sensitivity (2)

Parameter # 996 (continued)

Ultra Low Vibration Sensitivity (3)

User Interface Displays and Signals

Table 4-6 *LEDs, and Beeper Sequences*

Scale State	7-segment Diagnostic Display	LED (System)	Beeper Sequence	Scale Zero Button (LED)	Optional Scale Display
Scale disabled	No change	No change	None	OFF	Blank
Scale normal - stable with weight	No change	No change	None; single short beep after weight request from POS, if this feature is enabled.	Solid Green ON	Weight reading
Under zero	No change	No change	None	Flashing	All “- - - - -” (dashes)
Over range condition (weight is greater than 30.09 lb, or weight is greater than 15.045 kg)	No change	No change	None	OFF	*EEEEE*
Weight unstable	No change	No change	None	OFF	Numerical values blank but measurement unit icons (lb or kg) remain on.
Scale Zero button press	If zero operation fails it scrolls U12	Red (Warning) if zero operation fails on a **Scale Zero** button press; otherwise, no change	Click sound	No change	If successful weight reads 0 (zero) and <*0*> indicator icon illuminates.
Scale out of calibration	Scrolls fault code U14	Red (Warning)	None	OFF	Blinks *CAL*

Table 4-6 *LEDs, and Beeper Sequences (Continued)*

Scale State	7-segment Diagnostic Display	LED (System)	Beeper Sequence	Scale Zero Button (LED)	Optional Scale Display
Successfully entering scale legal Calibration Mode	*Step 2 - Program Legal Parameters* and *Step 3 - Calibration at NO LOAD* - Scrolls C00Lb OR C00g depending on units programmed as pounds (lb) or kilograms (kg) *Step 4 - Calibration at LOAD* - Scrolls C25Lb or C11g depending on units programmed as pounds (lb) or kilograms (kg) *Step 5 - Calibration Success or Failure* - Repeat scrolls of CALP then CALS Any step - Calibration Fails - Scrolls fault code: u##	No change	Five long beep tones	Off	*Step 3 - Calibration at NO LOAD* Blinks between *CAL00* and then *CAL_ _* with correct unit icon illuminated (lb or kg). *Step 4 - Calibration at LOAD* Blinks *CAL25* with lb icon illuminated, or blinks CAL11 with kg icon illuminated. *Step 5 - Calibration Success or Failure* Blinks between *CAL P* (PASS) and *CAL S* (save legal parameter settings). Any step - Calibration fails blinks *CAL F*.
Between calibration steps	No change	No change	No change	Off	Blinks *HOLD* while taking a measurement.
No platter installed at *Step 3 - Calibration at NO LOAD*	No change	No change	Persistent short beep tone at 1Hz	No change	Blinks *PLA*
Stepping through a calibration step	No change	No change	Single long beep tone after pressing the **Scale Zero** button	Off	No change
Failure to place the correct load on the scale at *Step 4 - Calibration at LOAD*	C25Lb or C11g depending on units programmed	No change	Two long beep tones	No change	No change

Table 4-6 *LEDs, and Beeper Sequences (Continued)*

Scale State	7-segment Diagnostic Display	LED (System)	Beeper Sequence	Scale Zero Button (LED)	Optional Scale Display
Successfully executing and exiting a scale legal calibration	Calibration procedure semantics removed from display.	No change	Three short beeps	Solid green on if weight stable after reset of scale	Scale is reset either by pressing the **Scale Zero** button, scanning the **Scale Reset** parameter bar code, or powering the unit OFF then ON. The seven segment test will run.
Cold reset of scale	No change	No change	No change except at *Step 5 - Calibration Success or Failure* - when the **Scale Zero** button is pressed three short beeps tones sound	No change	Seven segment test runs and displays: • *00.000* all icons illuminated for three seconds • Blank for one second • *99.999* all icons illuminated for three seconds • Blank for one second • Normal display
Audit Tally - Press and hold **Scale Zero** button for greater than three seconds when not in a Calibration Mode.	Repeated scroll: C### then P###	No change	None	No change	Blinks between *C###* and *P###.*
In Bootloader Mode	No change	Off	None	Off	None.
Scale Error	Scrolls fault code: u##	Red (Warning)	None	Off	Blinks *FAIL* or blanks display with unit icon showing lb or kg illuminated. Display can also blink *CALF* if the system was in a scale legal Calibration Mode.

CHAPTER 5 OPERATING THE SCANNER

Overview

This chapter describes how to operate the MP6000, including information about indicators (LEDs, beeper, etc,), beeper/speaker, user buttons, weighing items, and the 7-segment character (diagnostic) display.

Controls and Indicators

See *Table 5-1 on page 5-20* for all beeper and LED indications.

LED Array Bar

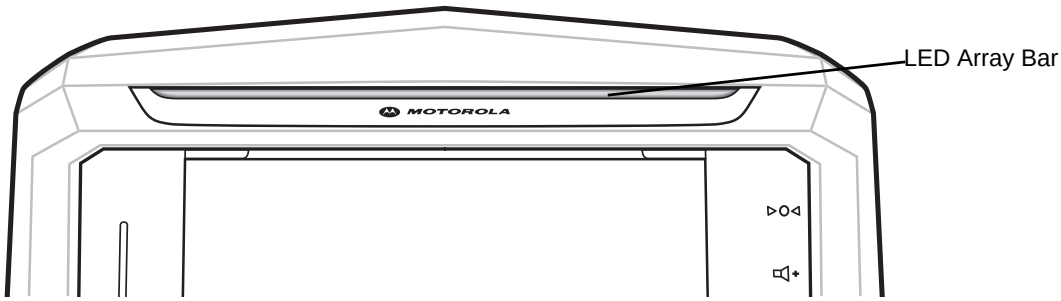


Figure 5-1 *LED Array Bar*

The LED array is located on the top of the device (*Figure 5-1*) and provides visual feedback for system statuses and alerts. The LED has an array of five bi-color (green/red) LEDs and, depending on the condition, the entire LED bar illuminates, or section of the bar illuminates.

The LED illuminates in the following situations:

- Successful bar code decodes.
- System warnings.
- Error conditions. The error illumination remains lit until all errors are resolved.
- System idle.

See *Table 5-1 on page 5-20* for LED indicator descriptions.

Diagnostic LED/7-segment Display

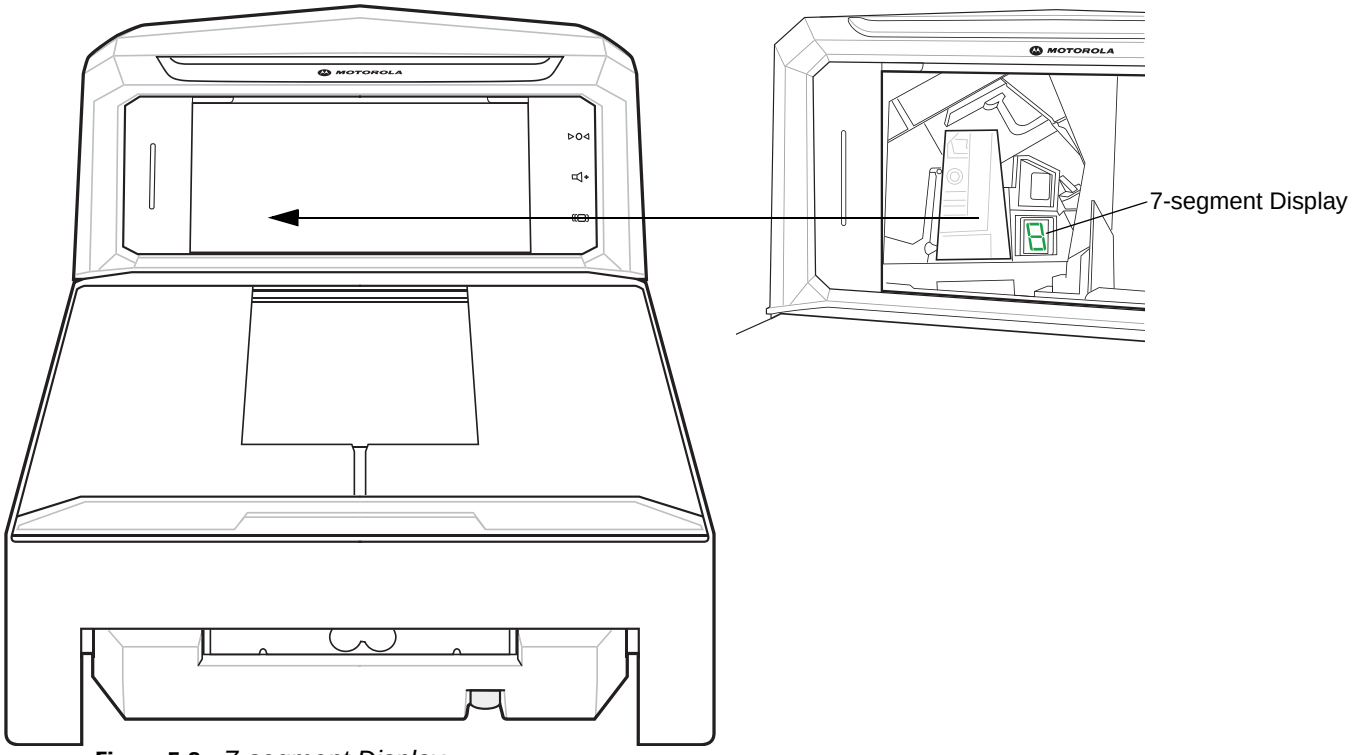


Figure 5-2 *7-segment Display*

Figure 5-2 shows the internal 7-segment display which provides error and warning codes, scale legal parameters and lead through help during scale calibration. It is visible inside the scanner's vertical window.

The 7-segment display is a one character display. Letter(s) and number(s) messages scroll one character at a time through the display. When a message is completed, the display pauses for two seconds. The message repeats continuously.

NOTE When there are no issues, a dash displays to show the 7-segment display is operational.

- If the message is an error, or warning it repeats until the issue is resolved.
- If the message is related to scale calibration it repeats until calibration is completed.
- If the message is related to the CAL/PAR display it repeats until the inspector/tester releases the **Scale Zero** button.

See *Appendix A, MAINTENANCE, TROUBLESHOOTING, AND ERROR CODES* for status and troubleshooting messages.

Front Panel Buttons

The three front panel user interface buttons are backlit for ease of use.

Scale Zero Button (Configurations with Scale Only)

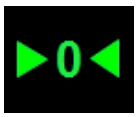


Figure 5-3 *Scale Zero Button*

This button is a scale zero button and status LED that controls some scale operation and displays scale status.

Touch **Scale Zero** to set the scale to zero (within +/- 0.6 lb, or +/- 0.300 kg). The LED is green and can be on, flashing, or off. LED brightness cannot be controlled.

See *Beeper and LED Indicators on page 5-20* for detailed indications.

Volume/Tone Control Button

Figure 5-4 *Volume/Tone Button*

This button allows user selectable settings for audible system indications. The user can control the audible feedback in the following situations:

- Decoding.
- Completion of a request (e.g., the successful decode of a bar code, and Sensormatic beep).
- Error conditions.
- Processing a request that takes an extended amount of time (e.g., scanning a sequence of parameter bar codes). This audible indication informs the user that the scanner is working, and not malfunctioning.

NOTE If the decode tone is set to off, the **Volume/Tone** button on the MP6000 is not operational. To enable the **Volume/Tone** button, set a tone option other than Off tone. Refer to the beeper and tone settings in the *MP6000 Bar Code Programming Guide* (p/n 72E-172633-xx).

To adjust volume and tone:

- Press and release the **Volume/Tone** button to sound the current scanner beep volume level.
- Press and release the **Volume/Tone** button twice within two seconds to change the scanner decode volume.
- Press and hold **Volume/Tone** for three seconds to change to another tone.

Each volume or tone change produces an audible beep when the new setting is complete. Volume and tone wrap from high to low.

See *Beeper and LED Indicators on page 5-20* for detailed indications.

Sensormatic Manual Activation and Sensormatic Status Button

Figure 5-5 *EAS Button*

This button indicates the state of the Sensormatic EAS device. The LED is yellow/amber and can be on, flashing, or off. See *Beeper and LED Indicators on page 5-20* for detailed indications.

Soft Reset Buttons

Figure 5-6 *Soft Reset Buttons*

A soft reset of the MP6000 can be initiated by pressing the **Scale Zero** and **EAS** buttons simultaneously for 10 seconds. A two second beep sounds, then a system reset is performed.

MP6000 Related Hardware

Scale Display (Scanner/Scale Configurations Only)

MP6000 models with a scale have an option for a single or dual Scale Display. The single display can be positioned to provide continuous display of weight values, and digital zero balance indication for customer and operator. The dual display offers more flexibility by allowing the two display heads to rotate independently.

Both single and dual displays show gross weight in pounds and/or kilograms (depending on location) in the following format:

Scale (Scanner/Scale Configurations Only)

Scales are available for Medium and Long versions only. Two optional scales are available.

Single Interval Range Scales

A single interval range scale has the same resolution for the entire weight range (from zero to maximum capacity). Single interval weight capacity:

0.00 - 30.00 lb at a resolution of 0.01 lb

0.000 - 15.000 kg at a resolution of 0.005 kg

Dual Interval Range Scales

A dual range scale changes resolution after a certain weight is reached. For example, 2g until 6kg, 5g above 6kg. Dual Interval weight capacity:

0.000 - 12.00 lb at a resolution of 0.005 lb; then 12.00 - 30.00 lb at a resolution of 0.01lb

0.000 - 6.000 kg at a resolution of 0.002 kg; then 6.000 - 15.000 kg at a resolution of 0.005 kg

Customer Side Scanner (CSS) - Optional

The CSS is a modular unit which is either embedded in the MP6000 tower, or added at any time to fit on the left or right side of the MP6000. The CSS snaps on to the MP6000 and requires no tools to install or remove. Connection to the MP6000 is via the internal USB cable.

The CSS enables shoppers to scan paper, plastic loyalty cards, or from a mobile device while a cashier scans other items simultaneously.

For detailed information about programming the CSS, refer to the *MX101 Product Reference Guide* (p/n 72E-171320-xx).

Platter

The platter covers the horizontal scan window, and scale (if applicable). It also accommodates product placement. The sapphire platter glass is built for long term reliability and clarity, and is impervious to scratches except from industrial diamonds.

Installing/Removing the Short and Medium Non-Scale Platters

To remove the platter push the front, left corner of the platter to lift it slightly. Use your fingers under the platter to lift it up and out.

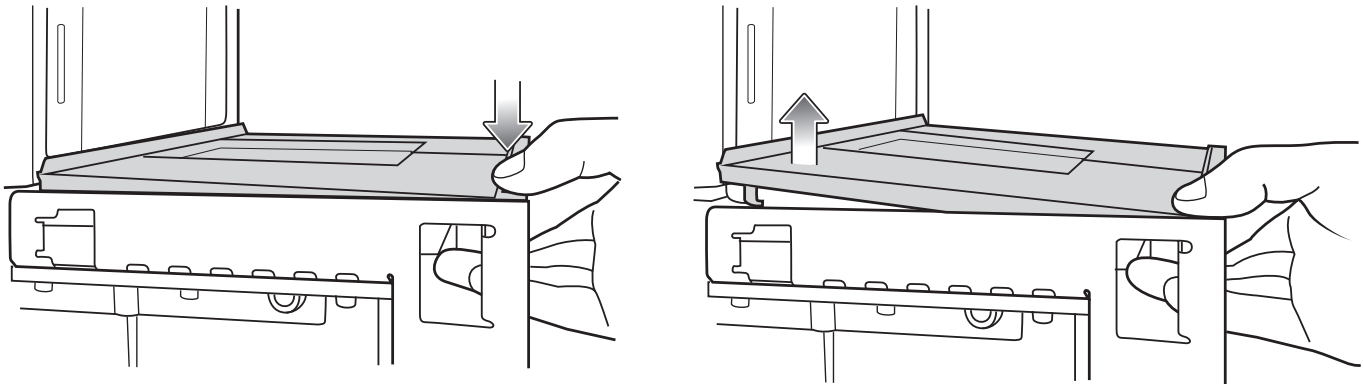


Figure 5-7 *Removing Short Platter*

To install the platter drop the tower end down into the unit and lay it flat.

Installing/Removing the Long Non-Scale and Medium Scale Platters

These platters have a lip at the cashier end which can be gripped for lifting.

To install the platter(s) drop the tower-end of the platter into the MP6000 first, and then lower the cashier end down using the lip.

To remove the platter(s) use the lip on platter at the cashier end to lift and then remove the platter.

Installing/Removing the Long Scale Platter

The long scale platter installs down into, and hooks onto the scale assembly.

To install the platter on a long MP6000 with a scale:

1. Line up the hooks on the platter with the notches in top scale frame.
2. Drop the platter straight down on scale top frame.
3. Slide the platter forward, engaging the hooks.
4. Drop the rear of the platter onto rear scale top frame pegs.

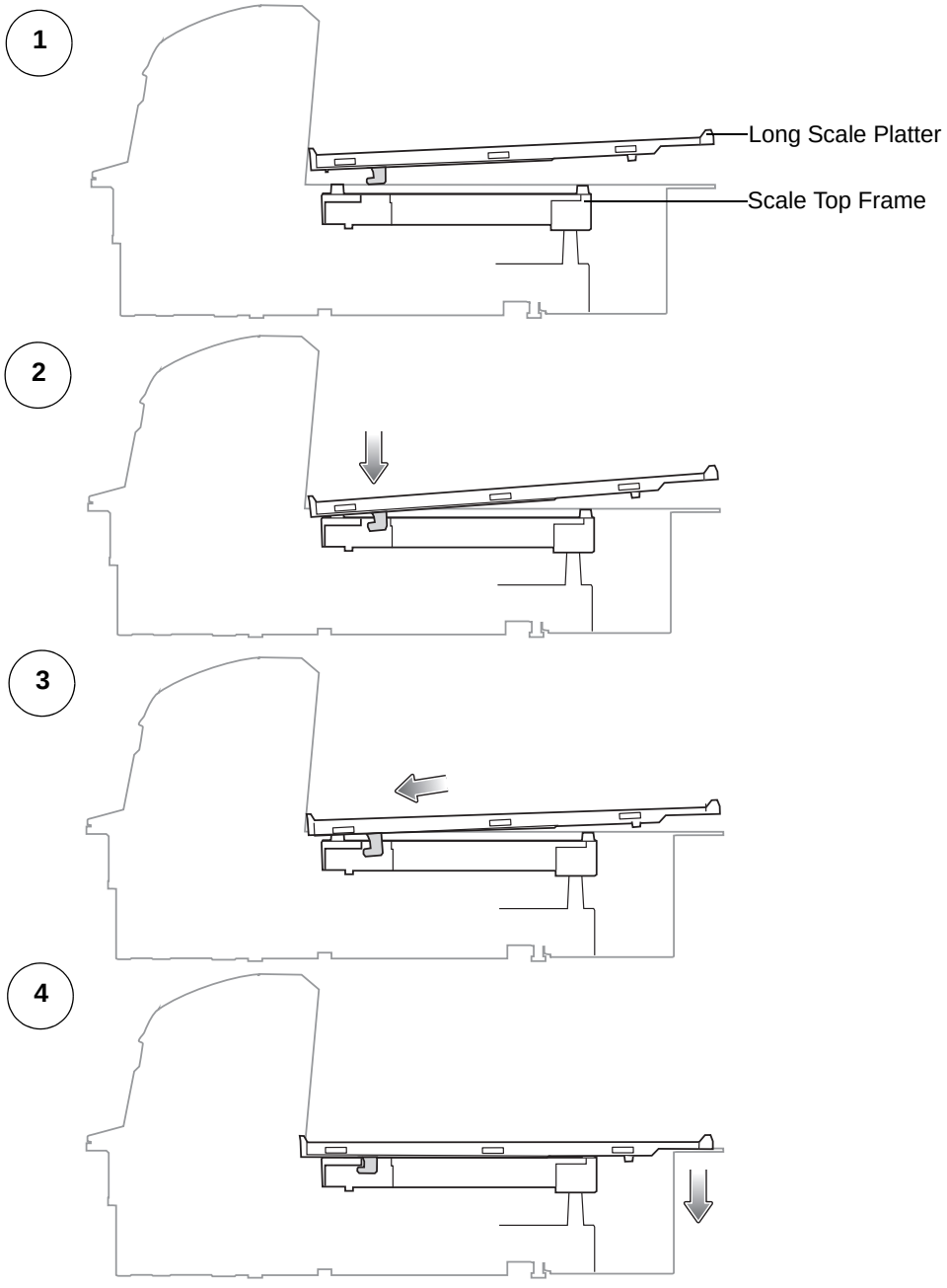


Figure 5-8 *Installing the Long Platter (MP6000 With Scale)*

To remove the platter on a long MP6000 with a scale:

1. Lift the rear of the platter slightly.
2. Slide the platter backwards, disengaging hooks.
3. Lift platter straight up and off.

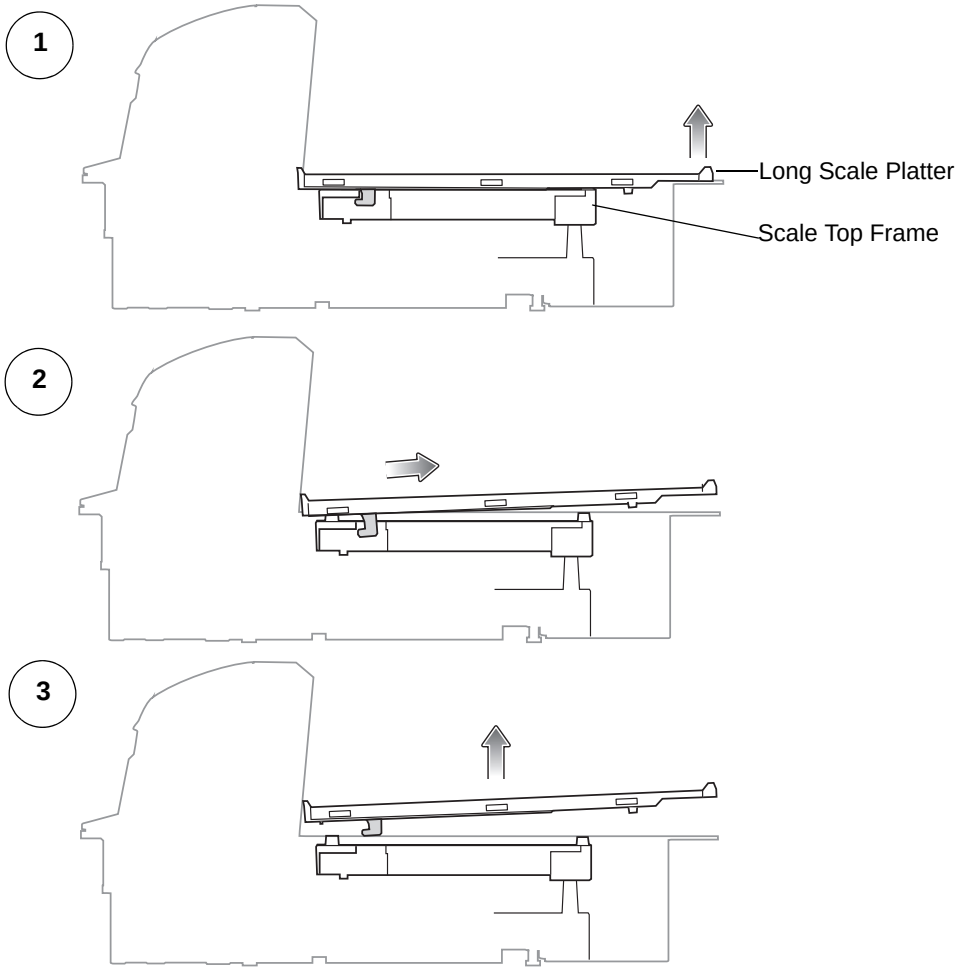


Figure 5-9 *Removing the Long Platter (MP6000 With Scale)*

Scan Windows

The MP6000 provides six sided scanning, including reading top down and cashier side bar codes. 2D scanning (PDF, Aztec etc.), mobile bar code scanning (cell phone) and scanning difficult symbols (e.g., truncated, poor contrast, and damaged bar codes) is accomplished in both vertical and horizontal windows in all six-sided orientations. See *Scanning on page 5-15* for more information.

The horizontal window on the platter is clear, scratch-proof sapphire built for long term reliability and clarity, and is impervious to scratches.

The vertical window is chemically tempered, and can sustain normal product impact. In case of abusive impact outside of normal usage, this window is laminated with anti splinter film to ensure the any glass shard remains intact to the window assembly.

Operating Modes

The MP6000 GEN I has two operating modes with corresponding power requirements (typical):

- Idle Mode < 5 W
- Active Mode 4.65 W average, < 12 W peak.

The MP6000 GEN II has two operating modes with corresponding power requirements (typical):

- Idle Mode < 3.75 W
- Active Mode 8.25 W average, < 12 W peak.

Programming the MP6000

The MP6000 can be programming using the following methods.

Programming Management tools

- 123Scan^2 (see *Chapter 6, 123SCAN2*)

> ***NOTE*** If an MP6000 scans a programming 2D bar code generated by 123Scan^2 it only programs the MP6000. If a CSS, and/or auxiliary scanner (e.g., the DS6878) are used with the MP6000, they must be programmed separately to be configured.

- SMS
  An SMS Package is a file, which when used with the SMS agent can manage a scanner remotely by programming parameters and updating firmware. An SMS Package is similar to a zip file, and includes three components:
  - 123Scan^2 configuration file containing parameters
  - 123Scan^2 plug-in containing scanner firmware
  - Load *Directive* file with programming details like trigger information.
- Staging flash drive reprogramming (*USB Staging Flash Drive on page 5-11*).

Application Programming Interfaces

- Zebra Scanner SDK APIs (CoreScanner APIs)

> ***NOTE*** SDK supported functionality by communication protocol is listed in *Appendix E, COMMUNICATION PROTOCOLS*.

- Zebra Scanner OPOS/JPOS APIs
- WMI Interfaces.

For access to the APIs go to: www.motorolasolutions.com/windowssdk.

Programming Bar Codes

With the exception of host interface, and initial scale setup parameters refer to the *MP6000 Bar Code Programming Guide* (p/n 72E-172633-xx) includes all the parameter bar codes necessary to configure the device.

USB Staging Flash Drive

A staging USB flash drive can be used to:

a. Set up an MP6000 system from a 123Scan^2 generated set of files

b. Perform MP6000 system cloning

and/or

c. Collect MP6000 statistics, usage, and diagnostics data.

A staging flash drive can be created by123Scan^2 and/or from an MP6000.

- A 123Scan^2 generated staging flash drive can perform device setups from 123Scan^2 to multiple MP6000s.
- An MP6000 generated staging flash drive can perform the following functions:

a. Device cloning from one MP6000 to multiple MP6000s.

b. Back up system settings from an MP6000 (the MP6000 parameter settings can be imported into 123Scan^2).

c. Collect statistics, usage, and diagnostics data (the data can be viewed in 123Scan^2).

MP6000 Menu Structure for the USB Staging Flash Drive

- ***Option 1*** - Copy an MP6000* configuration to the USB flash drive.
  - Copy parameter settings and firmware from the MP6000* to the USB flash drive for cloning to another device, or viewing in 123Scan^2.
  - When ***Option 1*** is available the 7-segment display shows a **1**, and one beep sounds.
- ***Option 2*** - Load a USB flash drive configuration to the MP6000*.
  - Load the parameter settings and firmware (if present) from the staging USB flash drive to this MP6000*.

    NOTE The MP6000 system configuration settings and firmware are overwritten.

  - When ***Option 2*** is available the 7-segment display shows a **2**, and two beeps sound.
- ***Option 3*** - Copy statistics, usage, and diagnostics data to the USB flash drive.
  - Copy data from the MP6000 onto the USB flash drive (the data can be viewed in 123Scan^2).
  - When ***Option 3*** is available the 7-segment display shows a **3**, and three beeps sound.
- Exit without doing anything - Remove USB flash drive from the MP6000.

*Auxiliary device settings, like the Customer Side Scanner (MX101) and Zebra corded scanners, are copied/loaded if applicable. Auxiliary cordless scanners are not supported.

See *Loading Cloning Files on page 5-13* for the process steps.

Manually Staging/Configuring MP6000 Devices

Manually staging/configuring MP6000 devices using a USB flash drive is a three step process.

Step 1: **Generate** the staging files, and load to a USB flash drive.

Step 2: **Deploy** the USB flash drive to transport staging files to an MP6000.

Step 3: **Load** the files and configure the MP6000 by inserting the staging flash drive.

The MP6000 has three USB ports which can be used to load files (see *Figure 5-10*):

- Two external ports on the side of the device.
- One internal port accessible by removing platter. The internal port sits straight up, and includes a cap cover which must be replaced when the drive is not in use. A missing, or incorrect placement of the cap does not allow the platter to sit properly when replaced.

IMPORTANT See *Approved USB Flash Drives for the Flash Drive Well on page 5-14* for the recommended flash drive dimensions for use in the internal USB port.

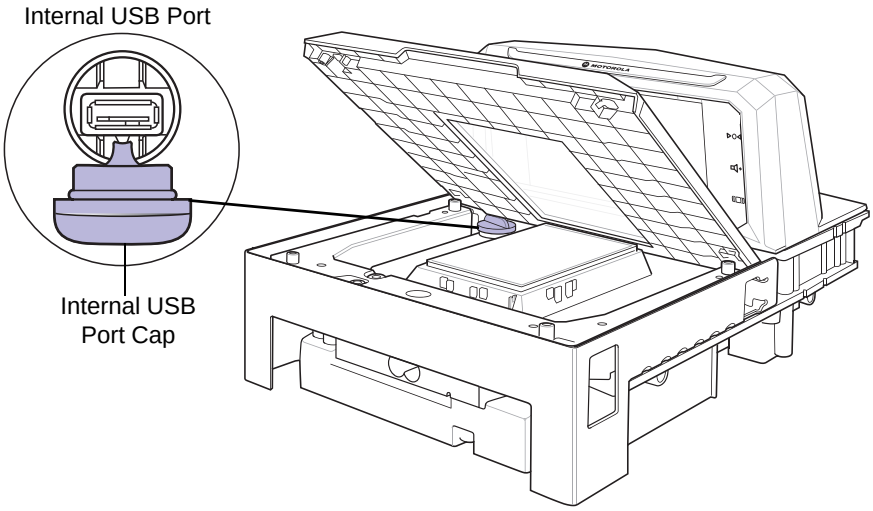


Figure 5-10 *USB Port Under the MP6000 Platter*

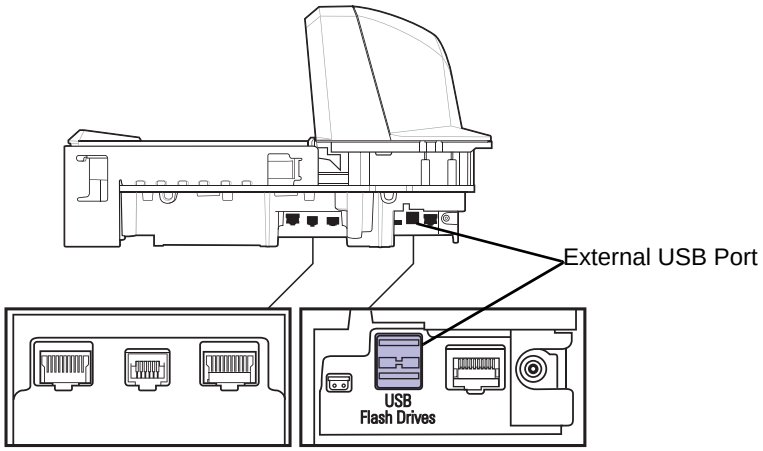


Figure 5-11 *USB Ports on the MP6000*

Loading Cloning Files

Cloning files can be loaded to the staging flash drive two ways:

- Insert the staging flash drive into one of the MP6000 USB ports (*Figure 5-10*), and select *Option 1 - Load Files* (see *Step 3*).
- Use 123Scan^2 to create and export files to the staging flash drive. (See *123Scan2 Staging Flash Drive Configuration* for more information.)

NOTE The USB flash drive must be at least 2.5 in. (63.5 mm) long to be accessible for removal after insertion into the internal MP6000 flash drive well. Alternatively, some USB flash drives include an opening in their rear covers into which a paper clip can be looped to help achieve the minimal length dimension.

See *Approved USB Flash Drives for the Flash Drive Well on page 5-14* for the recommended flash drive dimensions for use in the internal USB port.

It is recommended to start with a clean flash drive.

Follow the steps below to clone data.

1. Insert the staging flash drive in the USB port under the MP6000 platter.

   NOTES
   1. If EAS was installed and operational, the **EAS** button remains lit. If EAS was not installed, and/or not operational, the **EAS** button on the front panel of the MP6000 lights when the staging flash drive is inserted.
   2. While the staging flash drive is inserted:
      a) Do not remove power.
      b) Do not remove, or connect any cables.
      c) Do not press the **Volume** or **Scale** buttons.
      These actions may interfere with the staging flash drive process.

2. When the staging flash drive inserts correctly, the MP6000 detects the drive, and sounds two beeps (low/high).
3. The MP6000 identifies the data on the USB flash drive, and the 7-segment display shows a flash drive menu sequence. The flash drive menu displays three number options for approximately five seconds each. See *MP6000 Menu Structure for the USB Staging Flash Drive on page 5-11* for menu options.
4. When the option you desire displays in the menu, you have *five seconds* to select the option by pressing the **EAS** button (see *EAS Deactivation Button (Sensormatic only) on page 1-9*). One, two, or three beeps sound, depending on the option selected.
5. You have 15 seconds to confirm the selection by pressing the **EAS** button again. (If the selection is not confirmed, four fail beeps sound, and the 7-segment display re-scrolls the menu.)
6. After confirmation, the 7-segment display shows a scrolling bar (–). This means the device is working. When the process is complete (time varies) three success beeps (high/low/high), or four failure beeps sound, and the scrolling bar stops. Removing the staging flash drive at this point sounds the success or failure beeps again from the last operation performed.

   NOTE The scrolling bar stops whether or not the cloning process succeeded or failed. If the process failed, try again or contact the System Administrator.

   If the staging flash drive is removed prior to completion, a fail occurs (four beeps sound). Premature removal of the staging flash drive may result in a partial change in the system.

123Scan^2 Staging Flash Drive Configuration

The *Flash Drive Wizard* option within the 123Scan^2 utility steps a user through the process of generating a USB staging flash drive with cloning files.

To access the *Flash Drive Wizard* from any 123Scan^2 screen, click *Tools* > *Staging Flash Drive (MP6000 only)* > *Create Staging Flash Drive Files*.

Approved USB Flash Drives for the Flash Drive Well

When using the MP6000 flash drive well, located under the MP6000 platter, the USB flash drive must meet the specifications below to be accessible (easily inserted into, and removed from the well):

- Maximum thickness: .43 in. (11 mm)
- Maximum width: .82 in. (21 mm)
- Minimum length 2.5 in. (63.5 mm).

Scanning

The MP6000 uses its horizontal and vertical scan windows simultaneously to provide a high swipe speed using six sided scanning.

The MP6000 includes an automatic Infra-Red (IR) wakeup system that reduces power consumption. When any object is presented in the field of view of the scan windows, the red illumination turns on, but automatically turns off when the object is removed. When the object presented in the field of view includes a bar code, the MP6000 scans the bar code, and, if the bar code is successfully decoded, the illumination LEDs immediately turn off when the object is removed.

Position the bar code anywhere within the MP6000's field of view.

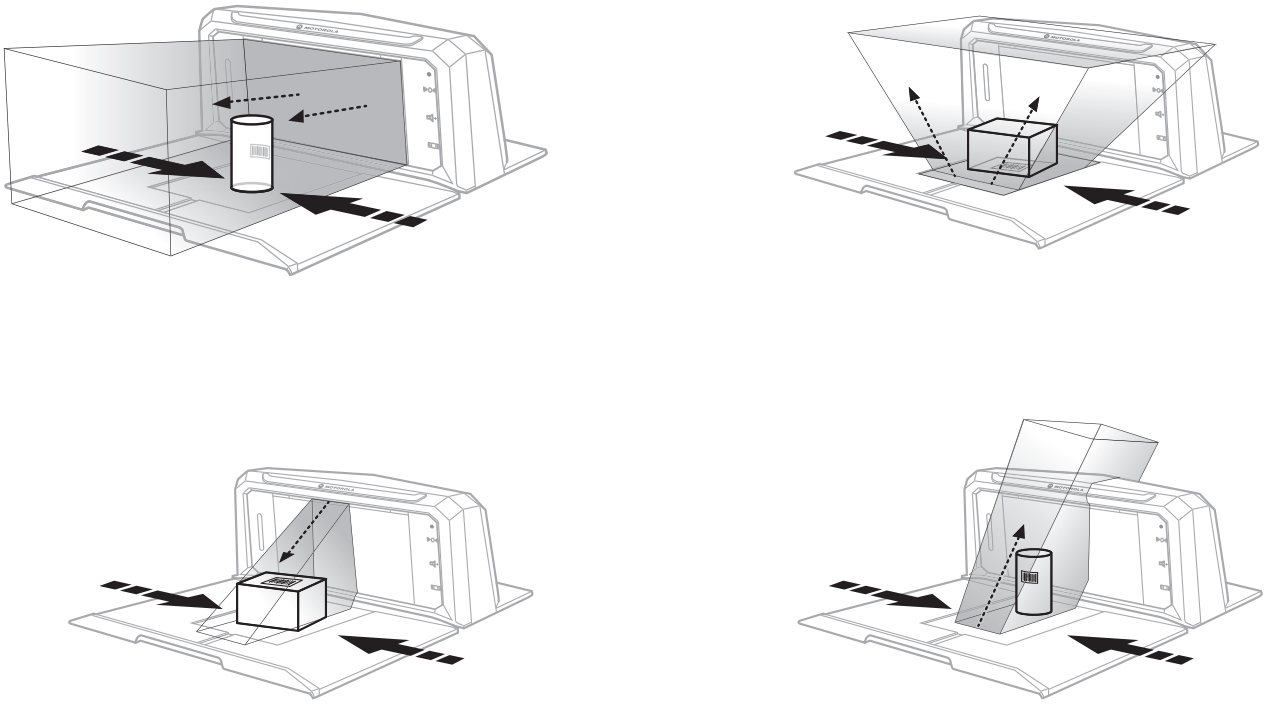


Figure 5-12 *Scanning with the MP6000*

The scanner beeps to indicate a successful decode, and the green light of the LED array bar on top of the vertical window momentarily fans out horizontally (see *Table 5-1 on page 5-20*).

Weighing Items

For proper weighing, items should be placed fully on the shaded (gray) regions of the scanner.

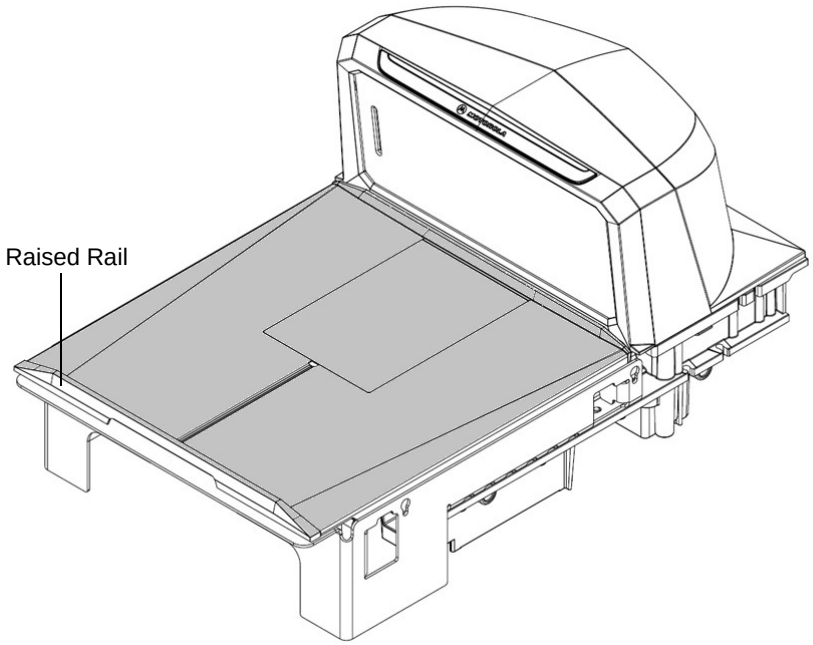


Figure 5-13 *Gray Weighing Region*

Long items may be weighed by laying them on the raised vegetable rail so that the end that overhangs the weighing surface is suspended above the countertop.

To weigh items, follow the steps below.

1. Ensure all items are removed from the platter, and the platter is in place.
2. Verify the Scale Display shows 0.00 lb (0.000 kg).

> ***NOTE*** If the Scale Display does not show 0.00 lb (0.000 kg), clear all items off the platter and zero the scale by touching the **Scale Zero** button.
>
> After weighing an item, if tones are enabled, a sound emits indicating transmission of a stable, non–zero weight.

3. If weighing does not occur, press **CLEAR** on the POS and try entering the weighed item's PLU number again. If an error code displays, or an error beep sounds, remove the item from the platter, remove the platter and check for debris underneath. If there is debris, remove it. Replace the platter, and press the **Scale Zero** button to reset the scale. Wait for 0.00 lb (0.000 kg) to display on the Scale Display and weigh the item again.

> ***NOTE*** If an error code displays in the 7-segment display, check *Table A-1 on page A-5* for likely causes and troubleshooting. If those suggestions do not help, take note of the error message and call your service provider or help desk. See *7-segment Display on page 1-9* for the location of the 7-segment display.

Electronic Article Surveillance (EAS)

The MP6000 has integrated Electronic Article Surveillance (EAS) options which allow support for Sensormatic EAS controllers or Checkpoint EAS controllers. (See *EAS Devices on page 1-8* for supported EAS controllers.)

The MP6000 and EAS system can operate independently of each other, or using communication cable to synchronize deactivation with barcode scanning. The deactivation range is mapped suitable to the scanner range, so both can be accomplished almost simultaneously

Supported EAS Controllers

- Sensormatic
  - Sensormatic ScanMax-Pro
  - Sensormatic AMB-9010 (available December 2014)
- Checkpoint
  - Checkpoint Interlocked, requires interlock cable: CB000002A01
  - Checkpoint Non-Interlocked.

NOTE Checkpoint and Sensormatic EAS systems require proper installation by representatives from those companies who install, verify, and tune the system for proper EAS operation. This is typically done on-site by those companies.

EAS Operating Modes and Settings

EAS operating modes function when EAS is enabled at the site and are independent of whether or not EAS equipment is connected. It is the installer's responsibility to match these settings with the installed equipment. Enabling EAS without EAS equipment, or with the wrong equipment installed, displays an EAS error message. See *Beeper and LED Indicators on page 5-20* and *Diagnostic LED 7-segment Display - Error and Warning Codes on page A-2* for beeper, warning, and error messages. Also refer to the *MP6000 Bar Code Programming Guide* (p/n 72E-172633-xx) for EAS bar codes.

The default mode for EAS is disabled. Disable EAS when this technology is not used, or if you are using Checkpoint without interlock.

There are 10 EAS operating modes and various EAS preferences for the MP6000:

- Sensormatic Auto
- Sensormatic Always Enabled
- Sensormatic Bar Code Interlock
- Sensormatic Bar Code Auto Interlock
- Sensormatic Self Service
- Sensormatic Scan Enable Interlock
- Checkpoint Bar Code Interlock
- Checkpoint Scan Enable Interlock
- Checkpoint Non Bar Code Interlock
- EAS Disable.

For detailed information about these modes, and the parameter bar codes, refer to the MP6000 Bar Code Programming Guide.

Checkpoint Controller

Checkpoint EAS soft tags can be detected and deactivated by a deactivation antenna mounted under the platter (see *Install Checkpoint Antenna on page 3-37*). EAS labels should be brought near the antenna to be deactivated.

Figure 5-14 *Checkpoint EAS Tags*

Sensormatic Controller

The Sensormatic controller includes a custom vertical and horizontal, high inductance antenna. The horizontal antenna is installed below the platter, on the middle housing, and is affixed to the housing with screws. The vertical antenna resides behind the vertical glass, and is also affixed to the scanner with screws. (See *Install Sensormatic Coils on page 3-34*).

Sensormatic EAS should always be enabled. There is no synchronization with a bar code read in this mode.

Sensormatic EAS Hard Tags

Figure 5-15 *Sensormatic EAS Hard Tags*

The detection of hard tags alerts the user with audible Geiger counter beeps. Environments with a mix of hard and soft tags sound a unique user alert (soft/hard tag beep).

Sensormatic EAS Soft Tags (Labels)

Figure 5-16 *Sensormatic EAS Soft Tags (Labels)*

Deactivation of soft tags alerts the user with audible Geiger counter beeps. Deactivation of soft tags synchronized with a bar code scan alerts the user with audible Geiger counter beeps. Soft tags can be disabled, and they can also be reset using a Sensormatic tag re-setter.

Beeper and LED Conditions

NOTE Refer to the MX101 Product Reference Guide (p/n 72E-171320-xx) for beeper and LED conditions for the CSS device.

Table 5-1 *Beeper and LED Indicators*

Condition	Beeper Indication	System LED Indication	Button LED Indication	Description
ADF Programming				
Number expected	High, Low Beeps	Green	No change	Enter another digit. Add leading zeros to the front if necessary.
Alpha character expected	Low, Low Beeps	Green	No change	Enter another alphabetic character or scan the End of Message bar code.
Criteria or action expected	High, High Beeps	Green Blinking	No change	ADF criteria or action is expected. Enter another criterion or action, or scan the Save Rule bar code.
ADF rule saved	High, Low, High, Low Beeps	Green (turns off blinking)	No change	Rule saved. Rule entry mode exited.
Criteria or action cleared	High, Low, Low Beeps	Green	No change	All criteria or actions cleared for current rule, continue entering rule.
Last rule deleted	Low Beep	Green	No change	Delete last saved rule. The current rule is left intact.
All rules deleted	Low, High, High Beeps	Green	No change	All rules are deleted.
ADF out of memory	Low, High, Low, High Beeps	Red	No change	Out of rule memory. Erase some existing rules, then try to save rule again
Cancel rule entry	Low, High, Low Beeps	Green (turns off blinking)	No change	Cancel rule entry. Rule entry mode exited because of an error or the user asked to exit rule entry.
Rule error	Low, High Beeps	Red	No change	Entry error, wrong bar code scanned, or criteria/action list is too long for a rule. Re-enter criterion or action.
Button Presses				
Press and release **Scale Zero** button	Click	No change	**Scale Zero** button LED blinks green (momentary)	LED illuminates only if **Scale Zero** button is enabled. Causes the scale to zero.

Table 5-1 *Beeper and LED Indicators (Continued)*

Condition	Beeper Indication	System LED Indication	Button LED Indication	Description
Press and hold **Scale Zero** button	Click	No change	None	If **Scale Zero** button is enabled, causes the scale calibration audit trail to display until button is released.
Press and hold/release **Scale Zero** and **EAS** buttons	Click	Red after 10 seconds upon reboot	No change	After buttons are held for 10 seconds, a system reboot initiates.
NOTE: The following condition occurs with firmware versions older than 3.4 (see *Identifying Firmware Version on page 4-2*).				
Press and hold **Scale Zero** and **Volume/Tone** buttons	Five long beeps after 5 seconds	No change	No change	After five seconds, scale calibration is entered.
NOTE: The following condition occurs with firmware version 3.4 and newer (see *Identifying Firmware Version on page 4-2*).				
Press and hold **Scale Zero** and **Volume/Tone** buttons for 5 seconds, then release	Short beep after 5 seconds; within 2 seconds of release, press the **Scale Zero** and **Volume/Tone** again and release; 5 long beeps sound	No change	No change	After final 5 long beeps sound, scale calibration is entered.
Press and release **EAS** button	Click	No change	EAS is enabled, LED is amber	If EAS is enabled, button press activates tag manual deactivation.
Code 39 Buffering				
Code 39 character added into buffer	High, Low Beeps	No change	No change	New Code 39 data was entered into the buffer.
Code 39 buffer full	3 Long High Beeps	No change	No change	Code 39 buffer is full.
Code 39 buffer cleared	High, Low, High Beeps	No change	No change	The Code 39 buffer was erased.
Code 39 buffer empty	Low, High, Low Beeps	No change	No change	The Code 39 buffer was erased or there was an attempt to clear or transmit an empty buffer.
Code 39 buffer transmitted	Low, High Beeps	No change	No change	A successful transmission of buffered data.
EAS/Security Tags				
EAS system disabled	None	No change	EAS LED is off	EAS parameter disabled.

Table 5-1 *Beeper and LED Indicators (Continued)*

Condition	Beeper Indication	System LED Indication	Button LED Indication	Description
EAS system functional (idle)	None	No change	EAS LED is on	EAS is operating normally.
EAS tag detected anytime	Configurable: None, Geiger Counter clicks	No change	EAS LED blinks yellow at 4 Hz	An EAS tag is in the EAS tag detected area, and being detected.
EAS manual deactivation activated	None	No change	EAS LED on	When deactivation is active on the system.
EAS Soft Tag Deactivation	None, Beep 1, Beep 2	No change	No change	Beep indicates that a soft tag was deactivated.
EAS Hard Tag Detected	None, Beep 1, Beep 2	No change	No change	Beep indicates that a hard tag was detected.
Firmware Download				
Firmware Download	Low, Medium, High beep after complete	Red alternating between on and fast blink	No change	Firmware download in progress. Firmware Download has multiple states. The LEDs during these states are: • During firmware data download/transfer - no LED control. • After reboot firmware is installed: LED blinks red, fast. • After complete, normal power-up beep.
Parameter Programming				
Parameter entry error	Low, High Beeps	Red	No change	Input error: incorrect bar code, programming sequence, or **Cancel** scanned.
Parameter number entry expected	High, Low Beeps	Green	No change	Number expected. Enter value using numeric bar codes.
Parameter entry accepted	High, Low, High, Low Beeps	Green	No change	Successful program exit with change in parameter setting.
Macro PDF				
Macro PDF buffered	2 Low Beeps	No change	No change	MDPF sequence buffered
Macro PDF file ID error	2 Long Low Beeps	No change	No change	File ID error. A bar code not in the current MPDF sequence was scanned.

Table 5-1 *Beeper and LED Indicators (Continued)*

Condition	Beeper Indication	System LED Indication	Button LED Indication	Description
Macro PDF buffer out of memory	3 Long Low Beeps	No change	No change	Out of memory. There is not enough buffer space to store the current MPDF symbol.
Macro PDF bad symbology encountered	4 Long Low Beeps	No change	No change	Bad symbology. Scanned a 1D or 2D bar code in a MPDF sequence, a duplicate MPDF label, a label in an incorrect order, or trying to transmit an empty or illegal MPDF field.
Macro PDF buffer flushed	5 Long Low Beeps	No change	No change	Flushing MPDF buffer.
Macro PDF aborted	Fast Warble Beep	No change	No change	Aborting MPDF sequence.
Macro PDF buffer flushed with no data	Low, High Beeps	Red	No change	Flushing an already empty MPDF buffer.
Scale: See *Table 4-6 on page 4-21* for scale conditions and displays.				
Standard Use				
System power-up	Low, Medium, High Beeps	None	No change	Power up.
System reboot	Loud two seconds beep	No change for 10 seconds. Red for last two seconds.	No change	After holding the **EAS** and **Volume** buttons for 10 seconds, the MP6000 reboots.
Bar code decoded	Off, Low, Medium, High, two-tone beep, or TBD tone (programmable)	Fan-out LED sequence.	No change	MP6000: LEDs arranged in a linear fashion will turn on in sequence; Center, then the two immediate surrounding LEDs, then the two outermost LEDs.
System is idle	None	Dim green (center LED only)	No change	Ready for decode.
System is disabled	None	No change, red: warning	No change	Host application has sent SCAN-DISABLE command.
Bar code data transmission error	4 Low Beeps	Red	No change	Transmission error.
Bar code data conversion error	5 Low Beeps	Red	No change	Conversion or Format error.
RS-232 host parity error	Low, Low, Low, Extra Low Beeps	Red	No change	RS-232 Receive error.

Table 5-1 *Beeper and LED Indicators (Continued)*

Condition	Beeper Indication	System LED Indication	Button LED Indication	Description
BELL (RS-232)	High Beep	None	No change	A <BEL> character is received over RS-232.
Volume				
Pressed and release **Volume/Tone** button	Annunciates volume level	No change	Button LED blinks for two seconds (at 2 Hz)	Volume change: causes the current volume level to be annunciated. If pressed within two seconds of the previous (or while volume LED is blinking), it annunciates the volume at the next level. Once the maximum volume level is reached, it wraps and begins at the lowest volume level.
Press and hold **Volume/Tone** button for two seconds	Annunciates decode tone	No change	Button LED blinks for two seconds	Decode tone changes Subsequence decode tones are heard every second if continuously held. Decode tones cycle.
Decode tone change (Describes action above)	Button click; decode beep at next tone (wrap)	No change	No change	After holding the **Volume** button for two seconds, the next decode tone sounds. For each additional second the decode tone changes again.

CHAPTER 6 123SCAN2

Introduction

123Scan² is an easy-to-use, PC-based software tool that enables the quick and easy setup of Zebra scanners.

123Scan² uses a wizard tool to guide users through a streamlined set up process. Once parameters are set, the values are saved to a configuration file that can be distributed via e-mail, electronically downloaded via a USB or RS-232 cable, or used to generate a sheet of programming bar codes that can be scanned. 123Scan² can generate multiple reports that can be easily re-branded using Microsoft Word or Access. Report options include programmed parameters, asset tracking information and proof of scanner output.

Additionally, 123Scan² can display scanned bar code data including non-printable characters. It can display, optimize and save pictures from an imaging scanner. It can also upgrade scanner firmware, automatically check online to enable support for newly released products, generate a single 2D bar code for one scan programming and stage large numbers of scanners simultaneously via USB hub(s).

Communication with 123Scan²

To communicate with the 123Scan² program which runs on a host computer running a Windows XP SP2, Windows 7 and Windows 8 operating system, use a USB cable to connect the MP6000 to the host computer (see *Connecting a USB Interface on page 2-4*).

123Scan² Requirements

- Host computer with Windows XP SP2 or Windows 7
- Scanner
- USB cable.

For more information on123Scan², go to: http://www.motorolasolutions.com/123Scan

For a 1 minute tour of 123Scan², go to: http://www.motorolasolutions.com/scannerhowtovideos

To download 123Scan² software and access the Help file integrated in the utility, go to: http://support.symbol.com/support/product/123Scan2.html

Scanner SDK, Other Software Tools, and Videos

Tackle all your scanner programming needs with our diversified set of software tools. Whether you need to simply stage a device, or develop a fully featured application with image and data capture as well as asset management, these tools help you every step of the way. To download any of the free tools listed below, go to: www.MotorolaSolutions.com/ScannerSoftware

- 123Scan² Configuration Utility (described in this chapter)
- Scanner SDK for Windows
- How-to-Videos
- Virtual Com Port Driver
- OPOS Driver
- JPOS Driver
- Scanner User Documentation
- Archive of Older Drivers.

APPENDIX A MAINTENANCE, TROUBLESHOOTING, AND ERROR CODES

Overview

This chapter provides error/warning codes, troubleshooting, and maintenance information.

- *Maintenance on page A-1*
- *Troubleshooting on page A-2*
- *Diagnostic LED 7-segment Display - Error and Warning Codes on page A-2*
- *General Error and Warning Codes on page A-5*
- *LED Display Notes on page A-2*
- *Scale Warning Codes on page A-6*

Maintenance

Clean the housing and glass with a damp cloth and, if necessary, a non-ammonia based detergent. Do not allow any abrasive material to touch the screen.

Troubleshooting

Diagnostic LED 7-segment Display - Error and Warning Codes

IMPORTANT The information in *Table A-1* and *Table A-2* are for reference only. Contact your service provider for any error or warning conditions.

The MP6000 includes a one character LED display inside the scanner vertical window. This display provides status and troubleshooting information, as well as scale legal parameters during calibration (only configurations with a scale).

Status, warning, and error information are communicated via letter(s) and number(s) scrolled one character at a time in the LED display. When a message completes, the display pauses for two seconds, then repeats the sequence continuously.

See *Chapter 4, SCALE CALIBRATION (MODELS WITH A SCALE ONLY)* for detailed calibration information, including calibration errors and warnings.

LED Display Notes

- **-** (dash) indicates normal operating mode.
- Scale calibration information (see *Table A-2 on page A-6*) has precedence over general warning messages but not over errors.
- Scrolling **CAL** (number of calibrations performed) and **PAR** (legal parameter) values display for scale verification (electronic *seal*).
- **Cxxx** and **Pxxx** scroll when the **Scale Zero** button is held for three or more seconds.
- An error message displays when a fault condition exists. A power cycle is required. Verify that the subsystems and auxiliary devices are operational.
- A warning message displays when a warning condition exists. The power sequence pauses until the issue is resolved.
- For scale firmware version # 1.04F (for applicable countries):
  - Scrolling **CAL** (number of calibrations performed) and **PAR** (legal parameter) values display for scale verification (electronic *seal*), and where required by country legislation, scale approved firmware version number.
  - **Cxxx** and **Pxxx** scroll when the **Scale Zero** button is held for three or more seconds, followed by **x.xx F** (determined by country legislation).

Status Indicator Light

The status indicator light on the MP6000 has three types of displays.

- Center green: Operating normally.
- Red warning: The outer two system LEDs are red; the display appears for .25 seconds every five seconds.
- Red error: All system LEDs turn red and remain red, overriding any other visual system LED sequences, until all errors are resolved.

Troubleshooting Assistance

If an MP6000 displays any of the LED display codes preceded with an **E** the unit will not operate correctly unless the error is resolved. For LED display codes preceded with a **U** the unit will continue to operate, although with possible performance degradation. Under any circumstance it is recommended to review basic hardware installation, and software configuration prior to contacting a Zebra approved Service Provider. It is often possible to restore unit function by following the steps below.

1. Remove power from the MP6000, POS equipment, and any auxiliary devices (hand-held scanners/cradles).
2. Inspect external cables including POS, auxiliary hand-held devices, and optional pole display (scale units only) for proper seating in their respective connectors.
3. Inspect internal cables:
   a. Scale Units Only - remove platter and confirm the scale communication cable is fully seated within the connector in the scale unit - if necessary remove the unit from the counter-top.

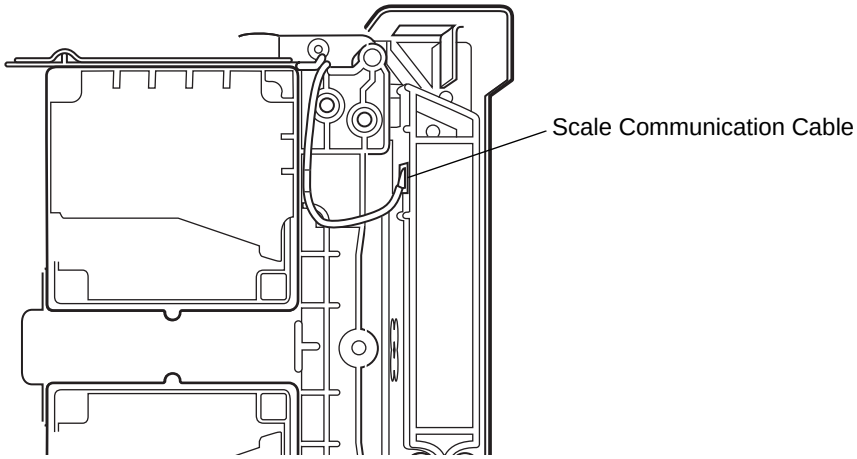


Figure A-1 *Scale Connector*

4. Remove tower bezel (front housing) and tower cover (back cover): inspect the cable connectors on the UI board (2), top LED board (1), and loudspeaker (1), ensuring they are completely seated within their respective connectors. For units with optional Customer Side Scanner (CSS) ensure the USB cable within the tower housing is routed down the side of the unit and fully inserted into the side USB port (see *Install the Customer Side Scanner (MX101) on page 3-16*).

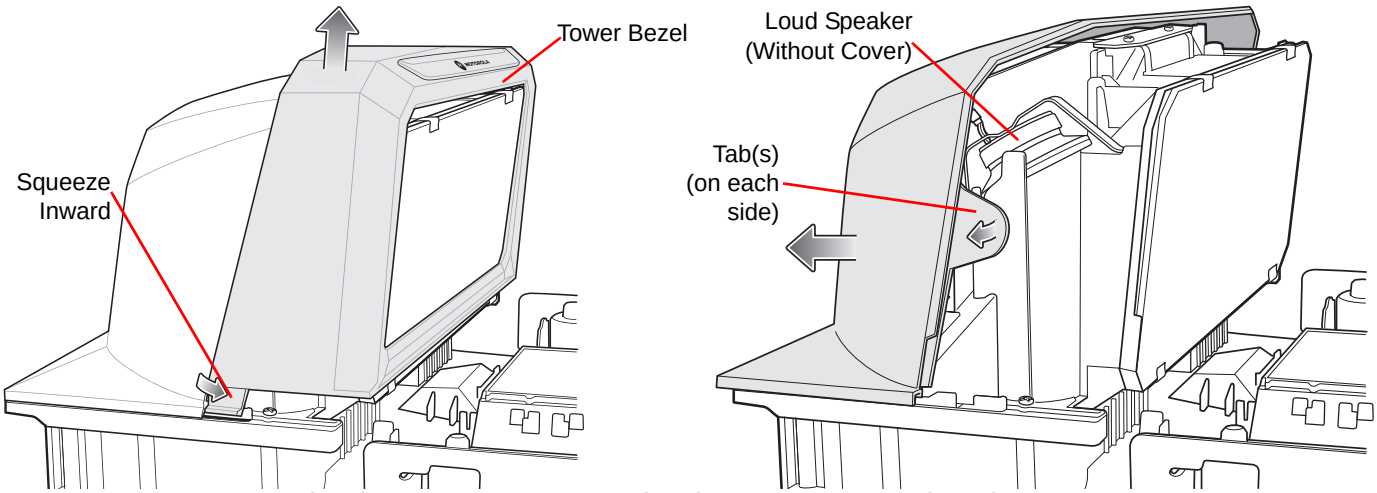


Figure A-2 *Removing the MP6000 Tower Bezel and Tower Cover; Loudspeaker*

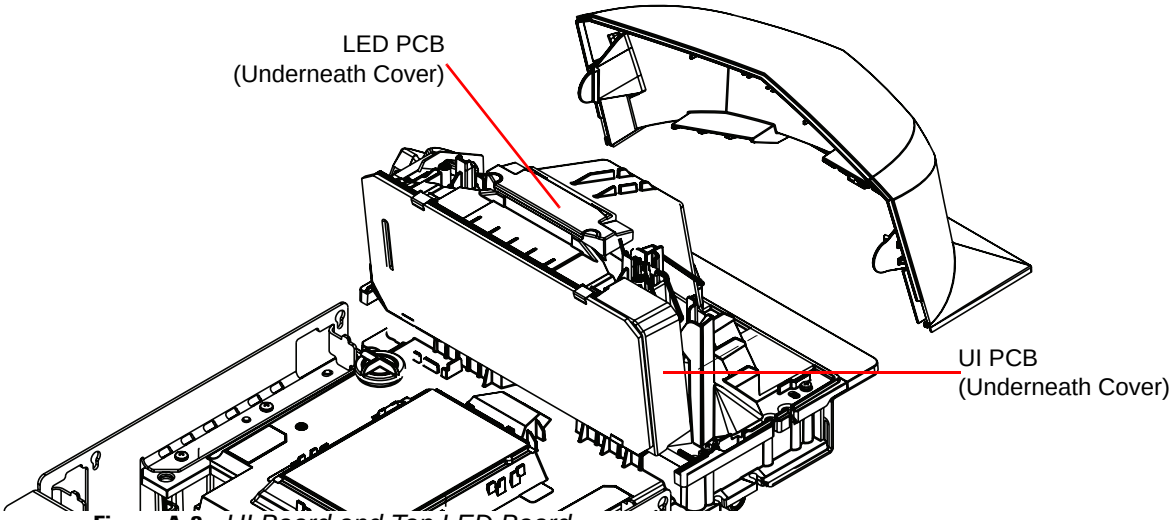


Figure A-3 *UI Board and Top LED Board*

5. Replace all covers.
6. Replace the platter on the unit.
7. Remove any objects from the platter, or near the unit and re-apply power to the MP6000 and attached equipment (POS, hand-held scanner).
8. Wait for the unit to boot, and listen for start-up audio indicators.
9. If the LED display codes persist contact your Zebra qualified Service Provider.

General Error and Warning Codes

Table A-1 *LED Display Error and Warning Codes*

LED Display Code	Error/Warning Indication
Errors (E)	
E21	Illumination failed
E26	Image Capture Hardware (HW assist) failure
E28	Digital Audio Playback failure
Warnings (U)	
U1	Diagnostic Test Flag (internal only)
U2	Illumination Current Limit warning
U3	Horizontal Left Current Limit warning
U4	Horizontal Center Current Limit warning
U5	Horizontal Right Current Limit warning
U6	Vertical Left Current Limit warning
U7	Vertical Center Current Limit warning
U8	Vertical Right Current Limit warning
U9	Image Sensor Warning (either)
U10	Vertical Image Sensor warning
U11	Horizontal Image Sensor warning
U16	Sensormatic EAS Offline warning
U17	Host Protocol warning
U18	Left Channel IR (object detection) failure
U19	Left auxiliary board warning
U20	Right auxiliary board warning
U25	Right Channel IR (object detection) failure
U27	User Interface (button interface) failure
U29	EAS Communication Error
U30	Center Channel IR (object detection) failure
U31	Indicates that the Sensormatic control box has an internal high voltage fault. The user should turn off the Sensormatic control box (EAS tags will not be detected or deactivated).
U32	Left auxiliary board is incompatible with this version of the MP6000 hardware.
U33	Right auxiliary board is incompatible with this version of the MP6000 hardware.

Scale Warning Codes

The warning codes listed in *Table A-2* display on the 7-segment display.

Table A-2 *Scale Fault Codes*

Warning Code	Warning Type	Description
U12	Scale Failed to Zero on **Scale Zero** Button Press	The scale failed to find a zero weight reference when the **Scale Zero** button was pressed. The scale will zero if the weight on the platter is within +/- 2% of maximum weight measurement capacity, and stable (i.e., no motion on platter). This is +/- 0.6 lb, or +/- 0.3 kg depending on the units of measure programmed. ***NOTE*** If operation fails, the user must clear it by pressing the **Scale Zero** button.
U13	Scale Outside of Zero Drift Threshold	The zero reference drifted beyond 80% of the initial zero setting range of -5% to +15% (i.e., -0.9 lb to +3.9 lb or -0.4 kg to +1.9 kg) maximum weight measurement capacity, relative to the zero weight reference found at a no load legal scale calibration. This is an advisory indicating that the scale will soon require a re-calibration. It can sometimes be cleared by scanning the **Scale Reset** parameter bar code, or re-powering the scale, or leaving the scale on from a cold power start for more than 10 minutes. If this persists, re-calibrate the scale. ***NOTE 1*** This fault code annunciates if a weight greater than 4.5 lb, or 2.25 kg, is left on the weighing surface while the scale comes up from a reset or cold power start. If this occurs, clear it by removing the weight. ***NOTE 2*** The fault code annunciates if the scale resets, or upon a cold reset of the MP6000 system, and the platter is not installed. It clears when the platter is reinstalled.
U14	Scale is Out of Calibration	The scale must be legally calibrated before it becomes operational. There are three reasons: • The scale can no longer find a zero weight reference: at power up; after a weight is removed from the platter during normal operation; or, when pressing the **Scale Zero** button. ***NOTE*** The scale software does not remove the scale from calibration under these conditions if it was already legally calibrated. This is a very visible condition for a user to troubleshoot. The Scale Display does not a show 0 (zero) reading from power-up, or after pressing the **Scale Zero** button with no load on the platter. • A new scale was installed in the MP6000. • A new MP6000 shipped from a factory to an installation that requires calibration at place of scale use.
U15	Scale Offline	This is an internal error in the MP6000 scanner/scale unit and in most cases a *Scale Communication Error U22* is reported before this error.

Table A-2 *Scale Fault Codes (Continued)*

Warning Code	Warning Type	Description
U22	Scale Communication Error	This is a failed communication between the MP6000 scanner PCB and the scale device. There are three issues that can cause this fault condition: • Circuitry on the MP6000 scanner PCB is failed. • Internal cable between scanner PCB and the scale device is faulty. • Internal circuitry on the scale device is faulty.
U23	Scale Display Communication Error	This is a failed communication between the MP6000 PCB and the Scale Display. There are three issues that can cause this fault condition: • The Scale Display configuration parameter is enabled and no Scale Display is connected to the MP6000 scanner/scale. Refer to the *MP6000 Bar Code Programming Guide* (p/n 72E-172633-xx) for scale parameters. • Display circuitry on the MP6000 PCB failed. • The Scale Display cable between the MP6000 PCB and the Scale Display is faulty, or the internal circuitry of the Scale Display is faulty. The Scale Display and cable are a single Line Replaceable Assembly (FRU*****). ***NOTE*** *In most applications, p/n MX201-SR00004ZZWW can be ordered as a replacement.
U24	Scale Motion Fault	This condition occurs when the scale detects constant motion on the weighing surface for an extended duration of time. This is a *latched fault*, meaning the MP6000 needs to be powered off, the problem fixed, and the MP6000 powered back on. There are one of three reasons for this fault condition. **a.** The scale was improperly installed, or is mechanically bent or damaged where it cannot achieve a stable weight condition. **b.** The scale or the platter is pressed up against a fixed object and its free motion is inhibited. **c.** Debris is lodged under one or more of the over travel stop screws. ***NOTE*** If this occurs, the recommendation in most cases, is to remove and re-seat the scale. The scale should be replaced if the condition persists.

APPENDIX B TECHNICAL SPECIFICATIONS

Technical Specifications

Table B-1 *MP6000 Technical Specifications*

Item	Description
Physical Characteristics	
Dimensions	
Platter Option	
Short (no scale available)	Length: 13.9 in. +0/-.05 in. (353.0 mm) Width: 11.5 in. +0/-.05 in. (292.0 mm) Depth: 4.0 ±0.08 in. (101.6 ±2 mm) Height: Above platter: 5.1 in. max
Medium scanner and scanner/scale	Length: 15.7 in. +0/-.05 in. (399.0 mm) Width: 11.5 in. +0/-.05 in. (292.0 mm) Depth: 4.0 ±0.08 in. (101.6 ±2 mm) Height: Above platter: 5.1 in. max
Long scanner and scanner/scale	Length: 20.0 in. +0/-.05 in. (508.0 mm) Width: 11.5 in. +0/-.05 in. (292.0 mm) Depth: 4.0 ±0.08 in. (101.6 ±2 mm) Height: Above platter: 5.1 in. max
Weight ***NOTE*** Weight includes platter, but not cables or power supply.	Short: 12.7 lb / 5.8 kg Medium (no scale): 13.0 lb / 6.0 kg Medium (with scale): 16.2 lb / 7.5 kg Long (no scale): 15.2 lb / 6.9 kg Long (with scale): 18.3 lb / 8.3 kg

Table B-1 *MP6000 Technical Specifications*

Item	Description
Power	• 12VDC from POS interface cable (USB PowerPlus, RS-232 or RS-485) • Zebra PWRS-14000-148R power supply: 90-264 VRMS (110-240 nominal), 47-63Hz (50-60 nominal). ***NOTE*** If a power supply plug is inserted to the J1 connector, with no voltage to the power supply, the scanner will not power up. The MP6000 GEN I has two operating modes with corresponding power requirements (typical): • Idle Mode < 5 W • Active Mode 5 W average, < 12 W peak. The MP6000 GEN II has two operating modes with corresponding power requirements (typical): • Idle Mode < 3.75 W • Active Mode 8.25 W average, < 12 W peak.
Data Ports	• One shared POS port for USB / RS-232 / IBM RS-485 • Three USB peripheral ports • Two powered RS-232 peripheral ports • Checkpoint interlock port • Scale Display port • Internal scale port

Scale	• 30 lb. in 0.01 lb. increments/15 kg in 5 g increments
	• Maximum static weight: 300 lb./136 kg
	• Scale can be added after scanner installation (most countries)
	• Single-cable and dual-cable protocols
	• Options:
	  • Dual-interval Zebra scale
	  • 0-12 lb. in 0.005 lb increments and 12-30 lb in 0.01 lb increments
	  • 0-6 kg in 2 g increments and 6-15 kg in 5 g increments
	  • Single-head and dual head Scale Displays
	  • Dual heads rotate fully independently for widest viewing angles on the market

Horizontal Platter	• Sapphire glass • Integrated produce bar
User Interface	• Soft-touch capacitive pads (no buttons to break or wear out) • Wide, centrally located two-color decode/information bar (clear for cashiers and self checkout users) • Beeper: adjustable volume and tones • Three programmable buttons

Table B-1 *MP6000 Technical Specifications*

Item	Description
Imaging Technology	
Type	Multiple CMOS Array Imager
Illumination	640nm, controlled by item detection system
Sides Read/Scan Zone	All six (6) sides; 720° coverage
1D/2D Symbologies	Refer to the *MP6000 Bar Code Programming Guide* (p/n 72E-172633-xx) for supported symbologies.
Performance Characteristics	
User Environment	
Operating Temperature	32° F to 104° F / 0° to 40° C
Storage Temperature	-40° F to 158° F / -40° C to 70° C
Humidity	20% to 95% (non-condensing)
Ambient Light (for scanning)	Artificial Light: 0 - 450 Foot-candles (4,842 LUX) Sunlight: 0 - 8,000 Foot-candles (86,080 LUX)
Software	
Management	Remotely via SMS; locally via laptop using 123Scan^2; via USB flash drive (self-configuring); remote statistics collection. For more information on123Scan², go to: http://www.motorolasolutions.com/123Scan.
Application Development Tools	Zebra Scanner SDK APIs (CoreScanner APIs) Zebra Scanner OPOS/JPOS APIs WMI interfaces
Peripherals and Accessories	
Optional CSS	The CSS enables shoppers to scan paper, plastic loyalty cards, or from a mobile device simultaneously while a cashier scans other items.
Scale Display	Enables indication of zero status and gross weight indication for both customer and operator.
Scale (Optional)	Both single-interval and dual-interval options are available
EAS	Compatible with existing Checkpoint and Sensormatic EAS systems
Hand-held Scanner	Zebra USB only
Leveling Screws	To use leveling screws, buy accessory kit MX301-SR00004ZZWR for standard-length screws, or accessory kit MX302-SR00004ZZWR for 1 in. (25 mm) extra length.
Checkpoint Interlock Cable Assembly Kit	p/n CBA-A54-S01EAR
Width Extender (trim piece)	Only for MP6000 long versions; p/n MX303-SR00004ZZWR

APPENDIX C HOST INTERFACE CHARACTER SETS

Introduction

You can assign the values in *Table C-1* as prefixes or suffixes for ASCII character data transmission.

RS-232 Character Sets

Table C-1 *Character Sets*

Prefix/Suffix Value	Full ASCII Code 39 Encode Character	RS-232 ASCII Character
1000	%U	NUL
1001	$A	SOH
1002	$B	STX
1003	$C	ETX
1004	$D	EOT
1005	$E	ENQ
1006	$F	ACK
1007	$G	BELL
1008	$H	BCKSPC
1009	$I	HORIZ TAB
1010	$J	LF/NW LN
1011	$K	VT
1012	$L	FF
1013	$M	CR/ENTER
1014	$N	SO
1015	$O	SI
1016	$P	DLE
1017	$Q	DC1/XON
1018	$R	DC2
1019	$S	DC3/XOFF
1020	$T	DC4
1021	$U	NAK
1022	$V	SYN
1023	$W	ETB
1024	$X	CAN
1025	$Y	EM
1026	$Z	SUB
1027	%A	ESC
1028	%B	FS

Table C-1 *Character Sets (Continued)*

Prefix/Suffix Value	Full ASCII Code 39 Encode Character	RS-232 ASCII Character
1029	%C	GS
1030	%D	RS
1031	%E	US
1032	Space	Space
1033	/A	!
1034	/B	
1035	/C	#
1036	/D	$
1037	/E	%
1038	/F	&
1039	/G	
1040	/H	(
1041	/I	)
1042	/J	*
1043	/K	+
1044	/L	,
1045	-	-
1046	.	.
1047	/O	/
1048	0	0
1049	1	1
1050	2	2
1051	3	3
1052	4	4
1053	5	5
1054	6	6
1055	7	7
1056	8	8
1057	9	9
1058	/Z	:
1059	%F	;

Table C-1 *Character Sets (Continued)*

Prefix/Suffix Value	Full ASCII Code 39 Encode Character	RS-232 ASCII Character
1060	%G	<
1061	%H	=
1062	%I	>
1063	%J	?
1064	%V	@
1065	A	A
1066	B	B
1067	C	C
1068	D	D
1069	E	E
1070	F	F
1071	G	G
1072	H	H
1073	I	I
1074	J	J
1075	K	K
1076	L	L
1077	M	M
1078	N	N
1079	O	O
1080	P	P
1081	Q	Q
1082	R	R
1083	S	S
1084	T	T
1085	U	U
1086	V	V
1087	W	W
1088	X	X
1089	Y	Y
1090	Z	Z

Table C-1 *Character Sets (Continued)*

Prefix/Suffix Value	Full ASCII Code 39 Encode Character	RS-232 ASCII Character
1091	%K	[
1092	%L	\
1093	%M	]
1094	%N	^
1095	%O	_
1096	%W	
1097	+A	a
1098	+B	b
1099	+C	c
1100	+D	d
1101	+E	e
1102	+F	f
1103	+G	g
1104	+H	h
1105	+I	i
1106	+J	j
1107	+K	k
1108	+L	l
1109	+M	m
1110	+N	n
1111	+O	o
1112	+P	p
1113	+Q	q
1114	+R	r
1115	+S	s
1116	+T	t
1117	+U	u
1118	+V	v
1119	+W	w
1120	+X	x
1121	+Y	y

Table C-1 *Character Sets (Continued)*

Prefix/Suffix Value	Full ASCII Code 39 Encode Character	RS-232 ASCII Character
1122	+Z	z
1123	%P	{
1124	%Q	|
1125	%R	}
1126	%S	~
1127 (RS-232)		Undefined
7013 (RS-232		ENTER

APPENDIX D PARAMETER DEFAULT TABLE

✓ ***NOTE*** This guide includes limited parameter bar codes. For ALL MP6000 programming bar codes, refer to the *MP6000 Bar Code Programming Guide (*p/n 72E-172633-xx).

Table D-1 *Parameter Defaults*

Parameter	Page Number
USB Device Type	
IBM Table-top USB	*2-7*
RS-232 Host Type	
Standard RS-232	*2-21*
RS-232 Device Port Configuration	
AUX 1 Sensormatic and AUX 2 RS-232 Scanner	*2-33*
Third Party Scale	
Disable Third Party Scale	*2-38*
Third Party Scale LED Pin - Active High	*2-40*
Third Party Scale Zero Pin - Active High	*2-42*
IBM Port Addresses	
None Selected	*2-45*
IBM Scale Port Addresses	
None Selected	*2-49*
Legal Scale Units	
Kilograms	*4-13*
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Table D-1 *Parameter Defaults (Continued)*

Parameter	Page Number
Disable Scale Display	*4-16*
Legal Scale Dampening Filter	
Low Vibration Sensitivity	*4-18*

APPENDIX E COMMUNICATION PROTOCOLS

Table E-1 *MP6000 Scanner - Functionality vs. Communication (Cable) Interface*

	Functionality		
Communication Interfaces	Data Transmission	Remote Management	Image and Video Transmission
USB			
HID Keyboard Emulation	Supported	Not Available	Not Available
Simple COM Port Emulation	Not Available	Not Available	Not Available
CDC COM Port Emulation	Supported	Not Available	Not Available
SSI over CDC COM Port Emulation	Not Available	Not Available	Not Available
IBM Table Top USB	Supported	Supported	Not Available
IBM Hand-Held USB	Supported	Supported	Not Available
USB OPOS Hand-held	Supported	Supported	Not Available
Symbol Native API (SNAPI) without Imaging Interface	Not Available	Supported	Not Available
Symbol Native API (SNAPI) with Imaging Interface	Available	Supported + OPOS	Not Available
RS-232			
Standard RS-232	Supported	Not Available	Not Available
ICL RS-232	Supported	Not Available	Not Available
Fujitsu RS-232	Supported	Not Available	Not Available
Wincor-Nixdorf RS-232 Mode A	Supported	Not Available	Not Available
Wincor-Nixdorf RS-232 Mode B	Supported	Not Available	Not Available

Table E-1 *MP6000 Scanner - Functionality vs. Communication (Cable) Interface*

Olivetti ORS4500	Supported	Not Available	Not Available
Omron	Supported	Not Available	Not Available
CUTE	Supported	Not Available	Not Available
OPOS/JPOS	Supported	Not Available	Not Available
NCR	Supported	Not Available	Not Available
Datalogic	Supported	Not Available	Not Available
SSI	Not Available	Supported	Not Available
IBM 4690			
Hand-Held Scanner Emulation (Port 9B)	Supported	Not Available	Not Available
Table Top Scanner Emulation (Port 17)	Supported	Supported	Not Available
Non-IBM Scanner Emulation (Port 5B)	Supported	Supported	Not Available

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